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# The Journal of the American Medical Association

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## SURGERY OF THE GALLBLADDER AND THE BILIARY DUCTS*


E. S. JUDD, M.D.

ROCHESTER, MINN.


Infection and malignancy are conditions which enter into the etiology of surgical lesions of the biliary tract. The contention that infection enters this region much more often by way of the general circulation than was formerly believed is supported by the results of experimental work on animals and also by the fact that infections in this tract are, in many instances, only a part of a more general infection, as is frequently shown by the presence of lesions existing in the appendix, duodenum or stomach at the same time. Whether the infection is primary in any one of these foci and from it distributed to the other regions, or whether infection begins at the same time at several different points, owing to organisms circulating in the blood stream, cannot be definitely decided. It is, however, of practical importance that surgical procedure for lesions of the biliary tract will usually involve exploration of these several areas, which adds little to the operation.

Undoubtedly, the entrance of the infection is sometimes through the portal circulation and the liver. In such cases, infection exists within the liver as well, though apparently this is eventually relieved by the proper surgical treatment. Infection persisting in the liver may in some instances be the cause of a recurrence of symptoms at a future time. The formation of calculi, which is usually the result of invasion by some type of bacteria, apparently takes place in the gallbladder or ducts or even in the intrahepatic ducts, though as stagnation is probably an important factor in stone formation, the stones more commonly have their origin within the gallbladder.

Surgery in malignant diseases of this region is usually palliative, and consists in devising some method by which the bile may be diverted into another part of the intestinal tract. Carcinoma of the gallbladder is rare and is seldom discovered in time to allow a radical removal. Primary carcinoma of the common duct is at times found when it can be excised and the tissues reconstructed with some hope of a complete cure. An obstructing malignant growth at the ampulla or in the head of the pancreas is more often seen. This necessitates joining the gallbladder to the stomach or intestine.

### CLINICAL CLASSIFICATION OF CASES

For the purpose of reviewing the clinical features in diseases of the gallbladder and its ducts they have been considered in four groups.

Group 1: In this group are those cases of a more or less chronic cholecystitis producing dyspepsia and at times acting as a focus for a more or less general infection. Such cases were mentioned by Moynihan as presenting the inaugural symptoms of gallbladder disease, and were those which formerly were slow in coming to surgeons. At the present time such conditions are much better understood. The clinical history in this group is not definite, and most intensive study is necessary before treatment can be recommended. All other possible lesions, of which there are many, must be excluded. The pain is usually not at all typical and is apt to be almost constant. A slight jaundice is frequently present and is sometimes persistent; attacks with a rise of temperature may be a part of the syndrome suggesting that the infection extends beyond the gallbladder. Often the condition has symptoms of general toxemia associated with it. The clinical evidence in many instances suggests that the neuritis or general rheumatic features are produced by an infected gallbladder which is acting as a focus for the general infection. Neuritis especially seems to be a part of the syndrome in some of these cases. Many of the patients with general toxemia complain of innumerable points of tenderness and pain, and great caution should be observed in assuming that these difficulties arise from the gallbladder. On the other hand, there can be no question that the infected gallbladder sometimes is a focus for general infection, and that this infection will subside when attention has been given to the gallbladder.

In many instances, cholecystitis is undoubtedly a forerunner of the formation of calculi, although, in a certain definite percentage of cases, cholecystitis remains a separate entity without showing any evidence of stone formation. Just what difference there is, in the pathology and bacteriology, between cholecystitis with stones and cholecystitis without stones, has not been definitely determined, although inflammation of the strawberry type may reach a very extreme degree without the formation of stone. It exists more often without stones than with them, so that apparently stones not only are the result of infection but also are the result of certain definite types of infection, and possibly occur under specific conditions. Gangrene and perforation of the gallbladder may occur without any evidence of calculi. At the time of exploration, it may be difficult to make out the pathologic conditions in the gallbladder even when the clinical features are very definite, as the gallbladder may appear quite normal. It must be granted that there is a certain percentage of such cases in which an exploration is made on good clinical evidence and in which no definite pathologic condition can be demonstrated. While at times it may seem advisable to remove a gallbladder which appears and feels quite

* Chairman's address, read before the Section on Surgery, General and Abdominal, at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

normal, at the same time it must be borne in mind that in order to obtain satisfactory results in any surgical procedure we must determine the basis for that procedure on the pathologic as well as on the clinical evidence, and that if an opinion is formed from the clinical picture alone, we may be led astray. It would be well to recall the very unsatisfactory results obtained in certain gastric cases some years ago when gastro-enterostomies were performed without its first being made certain that an ulcer was present. In those cases in which ulcer did exist, the results were good; but if the symptoms were being produced by some other pathologic condition, the patient was worse than before operation.

The results of certain operations on the colon make it seem that the absolute basis of most surgical operations must lie in the pathologic lesion itself. If there is cholecystitis, the gallbladder wall is usually thickened, white, and is either not compressible or empties very slowly on pressure. The fact that the gallbladder cannot be compressed is not in itself sufficient evidence to warrant operation. At times the small white spots in the mucosa of the gallbladder may be seen through the gallbladder wall in the strawberry type of infection. A considerable enlargement of the regional lymphatics will sometimes help in making a diagnosis. These lymphatics are always greatly enlarged and softened in the presence of marked cholecystitis. In this condition, which approximately constitutes 10 per cent. of all cases of cholecystitis in which the pathology is not evident on exploration, I believe that in most instances the trouble is in the gallbladder or pancreas or both, and that in a certain few the difficulty comes from a mistaken diagnosis. If all other possible lesions have been excluded and the clinical syndrome is positive, it may be necessary, occasionally, to remove what seems to be a fairly good gallbladder. On several occasions I have made the mistake of saving a gallbladder because of a lack of pathologic evidence for removing it, only to have the patient return with the same complaint, and to find at a second operation a very definite cholecystitis. For a time in these doubtful cases it was our custom to open the gallbladder and remove a small piece of the wall for pathologic examination before doing anything more radical. This was not of enough assistance to warrant its continuation because, possibly, at the time of the exploration no histologic changes actually existed, or else the section removed was not taken from the affected quadrant of the gallbladder. Drainage of the gallbladder in such cases is not sufficient. In most instances the symptoms are relieved for a time after drainage, but there is a recurrence of symptoms in too large a number of cases, as might be expected from the nature of the trouble, so that removal of the gallbladder is indicated in all cases of cholecystitis.

Group 2: In the second group of cases are included those patients having typical gallstone colic. The symptoms are very definite in every respect. The attacks are short, sharp and colicky, with characteristic radiation and residual soreness. There is usually no chill, fever or jaundice. Morphin and external heat are required to relieve the pain. Patients often have these attacks for a number of years without seeking treatment, probably because they feel perfectly well as soon as the pain subsides. On exploration, a gallbladder apparently normal in size, color and thickness, and containing one or many stones, may be found; or, in addition to the stones, any degree of inflammation may be present in the gallbladder at the same time. It is surprising in some instances to see what a good condition will be maintained in the gallbladder in spite of a large number of irregular stones. If the cystic duct is completely blocked, hydrops is found, the old colicky pains have probably disappeared, and the evidence of a mild persistent infection remains. In this group the clinical features and pathologic conditions are definite, and removal of the gallbladder is indicated.

Recently, in reviewing a large series of all types of gallbladder cases in which recurrence of symptoms had taken place some time after operation, we found that the largest percentage of recurrences occurred in this group. The first operation in most of the cases of recurrence had been drainage of the gallbladder, and the recurring symptoms were almost always due to stones in the gallbladder which had either been overlooked or had reformed after drainage. There was a great deal of evidence to show that stones often do reform in the gallbladder. In many of the cases of recurrence, the patients had been entirely free from trouble for from three to six years after drainage, when there was a sudden return of the former attacks, and exploration showed the gallbladder again filled with stones. In most instances, such gallbladders are probably functionless after the first operation. Furthermore, there is sufficient evidence at the present time to show that the patients are quite as comfortable without their gallbladders as they were with them.

Group 3: In this group are placed those cases of typical cholangeitis with stones in the common duct which at the time of the attack produce an obstruction to the flow of bile and a resulting jaundice. Each attack is associated with chills and fever as well as jaundice. In many such cases there are also stones in the gallbladder, which is most often contracted. There may also be stones in the cystic and hepatic ducts, and frequently there are swelling and hardening of the pancreas. In the performance of all gallbladder operations it is essential that the ducts shall be explored as carefully as possible, because stones are found in them when least expected. Such exploration should be confined to palpation unless there is clinical evidence that warrants opening the duct for examination. In cases of typical cholangeitis, the common duct should always be opened and, if possible, the exploration should be done with the finger in the duct, to make sure that all the stones have been removed from the hepatic ducts and from the ampulla. It is usually best in these cases to remove the gallbladder after the common duct has been cleared and the drainage placed. Stricture apparently does not follow ordinary uncomplicated operations of the common duct. It has been our custom to drain the common duct with a rubber tube, stitching the opening in the duct accurately about the tube. The gallbladder in these cases is frequently destroyed or nearly so, and a more complete recovery will follow its removal. If there are complications or if there is any question about the patency of the common duct, the gallbladder should be saved.

Group 4: In Group 4 are the atypical cholangeitis cases with painless or almost painless jaundice. I think it is quite impossible to make a definite diagnosis before exploration in a large percentage of these cases, and, in view of the fact that there is so much uncertainty about the diagnosis, in all cases of painless jaundice in which a positive clinical diagnosis cannot

be made, the patient should be subjected to an exploration. The symptoms may be produced by biliary cirrhosis or by malignant disease at the ampulla or at the head of the pancreas, and sometimes this form of jaundice may be produced by an inflammation in the head of the pancreas, although this occurrence is probably quite rare. Any variation in the jaundice or suggestion of fever or chills should be an indication for exploration. We have seen a considerable number of persons with jaundice in whom the symptoms were being produced by stone in the common duct and who insisted that they had had no pain at any time. Cases in this group are not ones in which it is especially attractive to operate, as the operation may be very difficult and the patient in none too good a condition. However, the greatest difficulty usually arises from oozing and hemorrhage, which may come from the wound or possibly from the mucous membrane of the nose, throat or intestinal tract, and may begin at any time up to eight or ten days after the operation. This oozing results from the condition of the blood, a careful study of which before operation is often very helpful. As a general rule, if the coagulation time is more than from twelve to fifteen minutes, the risk from any operative procedure will be very great. However, it has been noted in some cases in which there was a very long coagulation time that there was no tendency to ooze, while in others in which the coagulation time was well within normal limits there was considerable difficulty from oozing. In operating on these patients, jaundice should always be considered an indication of added risk, and if it is subsiding, the operation should be postponed. The use of calcium salts before or after operation has not been of distinct advantage in our experience with these cases. Too much emphasis cannot be laid on the advisability of transfusing all patients with jaundice before operation. To accomplish the most good, transfusions must be made before any oozing begins.

If, in spite of this procedure, oozing does start from the wound and from the mucous membranes, as it may at about the end of the first week after the operation, aspiration of the congested liver with a large trocar or even opening well into the liver substance is of great benefit. I have found this to be true in the few cases in which I have tried it. The bleeding from the wound in the liver is very profuse, and this is probably the way in which the benefit is derived. If the bile flowing from the tube in the common duct stops or is greatly reduced, it is almost certain to mean that oozing will take place, while, on the other hand, if bile drainage continues, there is not this danger of oozing, so that oozing depends directly on the capacity of the liver cells to functionate. In these cases, naturally, the liver cells are greatly congested and swollen so that they cannot secrete unless this pressure and swelling are relieved, which we have accomplished in these few cases by means of draining through incisions into the liver. Frequently the bile has started to flow very soon after this procedure. The common duct drainage tube should be left in place a long time. Frequent irrigations of physiologic sodium chlorid solution seem to bring away considerable clotted blood and, to a certain extent, relieve congestion. The most desperate cases are those in which the obstruction of the common duct is due to a stricture or in which the duct had formerly been ligated or divided during an operation. Such cases are becoming very common since the more frequent performance of cholecystectomy. The jaundice is generally complete, and no bile passes into the intestinal tract. The liver has usually been entirely closed off for from several months to a year or more, and the difficulty lies in establishing liver function after the duct has been reconstructed. The jaundice often persists in spite of bile drainage, and almost any type of toxemia may appear. Transfusion and aspiration of the large congested liver may be very useful.

### EXPERIMENTAL STUDY OF THE REMOVAL OF THE GALLBLADDER

A few years ago, Dr. F. C. Mann and I[1] removed the gallbladders from various species of animals and studied the effect of such procedure on the remaining portion of the biliary tract. Certain definite facts were ascertained by this study, the most important of which were that usually all the extrahepatic ducts dilate shortly after the gallbladder is removed, and that this dilatation is apparently due to fluctuations in pressure which are maintained by a small bundle of muscle fibers at the entrance of the ampulla into the duodenum known as the sphincter of Oddi. The study also showed that in many of the animals this sphincter apparently lost its resisting power shortly after the gallbladder had been removed. The bile, instead of flowing into the duodenum under the influence of this sphincter, flowed continuously, and the bile pressure within the common duct, which is normally at least 100 mm. of water, dropped so as not to exceed 30 mm. In many instances the bile pressure within the duct was practically nil a few weeks after the gallbladder had been removed.

Mann's further studies on these points are very interesting. In comparing the bile pressure in a species of animals which had a gallbladder with that in a species of animals without a gallbladder, he has shown that the animals which do not possess this organ have bile flowing through the common duct which is practically under no pressure, in spite of the fact that the sphincter of Oddi in this species is apparently the same anatomically as in the species having the gallbladder. The changes produced in the remaining parts of the excretory apparatus of the liver after the gallbladder had been removed were the most conclusive proofs obtained that the gallbladder has a definite function. Mann has grouped the theories that have been offered to explain the functional significance of the gallbladder under three headings: First, the gallbladder may functionate as a reservoir for the storing of bile. While this may be true to a slight degree, it is well known that the capacity is too small, as compared with the amount of bile secreted, to act very capably as a storage reservoir. Second, he classifies the gallbladder as a secretory organ which elaborates and adds something that is of importance either to the general body economy or to the mechanism of bile expulsion or chemical action. It is certain that the gallbladder adds mucus to the bile, and it is also certain that this mucus mixed with the bile changes it considerably. It has been shown repeatedly that mucus from the gallbladder mixed with bile renders it much less irritating to the pancreas in case it comes in contact with that organ. Third, he names the gallbladder the regulator of the flow of bile. This function of the gallbladder has been suggested by a number of investigators. From the

1. Judd, E. S., and Mann, F. C.: The Effect of Removal of the Gallbladder: An Experimental Study, Surg., Gynec. and Obst., 1917, **24**, 437-442. Judd, E. S.: Cholecystitis: Changes Produced by the Removal of the Gallbladder, Boston Med. and Surg. Jour., 1916, **174**, 815-825. Mann, F. C.: The Function of the Gallbladder: An Experimental Study, New Orleans Med. and Surg. Jour., to be published.

changes produced in the flow of bile by cholecystectomy, it would seem well established that the gallbladder certainly has something to do with the bile flow, and that its action as a tension bulb must be one of its most important duties.

Our investigations and also those of others would seem to show beyond any question that the bile flow is regulated, at least to a degree, by the gallbladder. Mann's comparative studies of animals having a gallbladder with those not having a gallbladder are also interesting. He has shown that the length, diameter and point of entrance of the common duct into the duodenum, while varying considerably in different species, bears no relationship to either the normal presence or absence of the gallbladder. These studies show, however, that the species of animals without a gallbladder maintain practically no pressure in the common duct. In no instance was the pressure withstood by the sphincter of Oddi more than 30 mm. of water in animals without a gallbladder as compared with 100 mm. as the minimum pressure which the sphincter would withstand in animals possessing a gallbladder. While the sphincter of Oddi is histologically and anatomically the same in animals of the two species, it is not physiologically active in animals without a gallbladder or is certainly not so active as in those possessing one.

### TECHNIC OF THE REMOVAL OF THE GALLBLADDER

The technic of operations on the gallbladder and ducts is definitely established, though there is much variation in the operation according to the judgment and method of proceeding of the individual operator. There can be no question that cholecystectomy is as safe a procedure as cholecystostomy, if the operator has had ordinary experience. The immediate convalescence is more satisfactory and the ultimate results certainly are better following cholecystectomy. Whether the removal of the gallbladder be done by starting at the fundus and dissecting downward or by starting at the cystic duct and freeing it first, there are two main factors which must be emphasized: 1. The cystic artery must be securely tied. I do not believe it is material whether this is tied in conjunction with the cystic duct or separately. If the artery can be isolated with the duct and tied at the same time, it will be sufficient. 2. In order to prevent any disturbance of the common duct, it is absolutely essential that a complete isolation of the cystic duct be made before any clamps or ligatures are applied. The most serious consequence of a cholecystectomy is trauma to the common duct. The duct has undoubtedly been caught in clamps and completely divided a great many times. This cannot possibly happen if the cystic duct is isolated beforehand. In an endeavor to remove all of the cystic duct, the common duct has often been injured or even ligated. Judging from our review of recurring cases it does not appear necessary to remove all of the cystic duct to obtain satisfactory results. In a very small percentage of cases, if at all, will the stump of the cystic duct or the entire cystic duct cause trouble after cholecystectomy.

While removal of the gallbladder should be the operation of choice, in cases of cholecystitis with or without stones, still, in a certain small percentage of cases, it is much better to do a cholecystostomy primarily and then to remove the gallbladder in a second operation if it becomes necessary. This would seem to me to be the best plan in case of much infection outside of and about the gallbladder or in cases in which there is a great amount of induration and edema about the ducts. If the infection is confined to the gallbladder, it is best to remove it if possible. Enlargement and hardening of the head of the pancreas is an indication for removal of the gallbladder in preference to drainage, and this would still hold good in the presence of a slight degree of jaundice if the jaundice is due to pancreatitis. Cholecystectomy, seemingly, accomplishes more in cases of pancreatitis associated with gallbladder conditions than does any other form of treatment. This is probably due to the changes produced in the excretory apparatus by the removal of the gallbladder. It does not seem to me to be advisable to open the common duct for exploration unless stones can be palpated or unless clinical features suggest that stones or infection are present in the duct. Dilatation of the common duct is not an indication for draining it, as this change would have taken place if the gallbladder had been out of commission for any length of time. If jaundice exists at the time of the operation, the duct, as a rule, should be opened even if no stones are palpated, as the convalescence will be more satisfactory if the infected ducts are drained. If the stones in the ampulla can be removed through an opening in the duct, it is much safer and is preferable to the transduodenal operation. Exploration of the gallbladder and ducts should be performed in almost all cases of chronic jaundice in which the diagnosis is uncertain. Some of these will prove to be due to infection which can be promptly relieved; and if a malignant obstruction does exist, a palliative operation can often be done which will be very satisfactory.

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## INDURATIVE OR RHEUMATIC HEADACHE *

HUGH T. PATRICK, M.D.
CHICAGO

### HISTORICAL

Thirty-odd years ago, Scandinavian masseurs discovered that in certain cases of headache there was considerable tenderness in the occipital and suboccipital regions, and sometimes in others, and that many of the patients were relieved by persistent massage.[1] Led by the sense of touch, these therapeutists concluded that the trouble lay in multiform thickenings in the forms of nodes, nodules, strands and more diffuse infiltrations. From the statements of their patients they decided that the lesions were produced by exposure, by "catching cold," by the rheumatic diathesis and by other agents still more vague. Gradually recognition of this variety of headache percolated into Germany, France and the United States, but full scientific investigation is still lacking. Our knowledge of the trouble remains nearly where it was thirty years ago, but in the meantime concerning it a lot of nonsense has been perpetrated and perpetuated. Now and again it has been artificially expanded to take in migraine, neurasthenic headache, neuralgia, in fact, practically all pain in the head except that of grave intracranial disease. In spite of

* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

1. Telling (Lancet, London, 1911, **1**, 154) says that in 1816 Balfour described "nodular myositis," and that in 1876 Uno Helleday, a Swede, published an important paper on the subject.

vague ideas and nonsense, the fact that this rheumatic or indurative headache exists will become apparent to any careful observer. Though not very common, it is far from rare. To know about it is worth while, because if not recognized it may easily be mistaken for serious intracranial disease or for an unimportant functional headache, and because if not correctly treated, it may continue for months and years, while proper treatment practically always cures it. Since it has been made too inclusive by some authors, one must be cautious in taking clinical descriptions from the literature. Hence the following is based principally on my own experience.

## SYMPTOMS

Rheumatic or indurative headache may be acute, but most cases are subacute or chronic — a matter of many weeks or months, not rarely of years. With Auerbach[2] I agree that the majority of the patients are women, but the preponderance is not great — about four to three. The disease seems to be rare in persons under 20 years of age, is not unusual in those under 30, but more than half of the patients are over 40.

It is a real pain; it hurts. This is emphasized because the subacute or chronic headache of neurasthenia or psychasthenia and of many of the mild psychoses, though bitterly complained of, is not a real pain but a distressing discomfort. The real pain may be intense, especially in the acute cases, or only nagging, and it may keep the patient awake at night. Whether intense or rather severe, or merely an aching soreness, it may be described as a steady pain with remissions, or intermissions, and exacerbations. It has neither the instantaneous shoots nor the brief excruciating paroxysms lasting a few seconds, with perfect calm between, so typical of trifacial neuralgia. Nor does it come in definite, severe attacks, continuous for from six to forty-eight hours with free intervals of weeks, as does migraine. Nausea and vomiting do not enter the symptomatology. In the acute cases, the pain never ceases but always fluctuates. In the subacute cases complete intermissions are few and short; remissions are longer but rarely for more than a few days. In this respect the chronic ones may be likened to chronic arthritis which has bad days, better days and good days, but in which more or less soreness is always there and the patient is ever with the feeling that bad pain is impending. Like the pain of sinus disease, rheumatic headache may be worse during one part of the twenty-four hours, and it may be almost limited to this period. Consequently, like sinus headache, I think it has sometimes been thought to be due to malaria. On the whole, it is apt to be worse in the afternoons or evenings.

The location of the pain is of some importance. Never is it frontal or vertical alone, rarely temporal; especially is it occipital or suboccipital, though from this region it may radiate to the vertex, the frontal or the temporal areas or to all of them. I have known it to be limited to the parietal region, but this is unusual. It is more often bilateral than unilateral. Notable is the somewhat exceptional fact that while the patient speaks of his pain as headache, it is almost confined to the back of the neck with a little radiation upward. This circumstance is sometimes so striking that I have labeled the cases "arthritic headache." That is to say, there is apparently no trouble above the occipito-atloid joint, while obviously there is trouble in or (and) below this point. The pain felt above is either referred pain or due to irritation of the occipital nerves.[3] At times it may be produced by pressure in the upper neck. Not rarely the pains radiate toward the shoulders or down the back, and subscapular pain may be present.

Of great significance is the presence of tenderness to pressure. There is none of the surface sensitiveness to touch sometimes present after an attack of migraine, nor is the head sensitive to heavy percussion (with the fist) as it sometimes is in sinus disease, but rather deep pressure or firm stroking in some place or places hurts. These places are especially the lower occiput and upper neck, but they vary a good deal. Particularly to be examined are the muscular insertions on the occiput, the upper neck at the rear and sides, and the occipital aponeurosis of the occipitofrontalis. Quite frequently the trapezius and even the sternomastoid are tender, and not rarely the parietal or temporal muscles.

As already noted, the discoverers of this headache always found exudative lumps or nodules, emphasized by most subsequent writers. I am sure the average practitioner will not often find them. As a clinical feature, they may be ignored. The tenderness suffices. But of this, more in connection with the pathology.

If indurative headache really is a rheumatic affection, one would expect frequently to find other evidences of so-called rheumatism. And such is the case. Probably this is most frequently evidenced by pain on movement of the neck. This may be constant or only off and on, and may be caused by only one or by several movements. Especially to be tried are extreme rotation and lateral flexion, passive, active and against resistance. In other words, in rheumatic headache there is often involvement of the joints or muscles and ligaments of the neck. Although this is the most frequent concomitant, spinal joint lower down, shoulder, subscapular region, hip or even smaller joints may be implicated. Because the headache is the crying complaint, the patient may say nothing of the other troubles. They have to be looked for. Maybe they have preceded the headache and for the time being have disappeared.

Like other rheumatic troubles, indurative headache is apt to be worse after exposure to cold, after "catching cold," and during changeable weather. Cold applications generally aggravate, while heat alleviates it. It is increased by stooping, straining and coughing, generally by physical exertion, and rather rarely by jolting or jarring. Frequently it is increased by mental application and consequently interferes with intellectual concentration.

What I believe to be two important findings, fever and leukocytosis, perhaps would better be considered in connection with the pathology.

## PATHOLOGY

As noted before, the disease has always been considered to lie in the nodes or strands: the *Knötchen* or *Schwielen* of the Germans. Of all the authors consulted, no one seems to doubt their presence and specificity unless it be Telling.[4] Assuredly I am in no

2. Auerbach, S.: Der Kopfschmerz, Berlin, 1912.

3. The same sort of pain may be due to other causes. Gordon Holmes (Headaches of Organic Origin, Practitioner, London, 1913, **90**, 968) relates an interesting case of headache due to tuberculous caries of the "highest cervical vertebrae."

4. Telling, W. H. M.: Nodular Fibromyositis, Lancet, London, 1911, **7**, 154-158.

position to assert what a skilled palpator assisted by liberal lubrication (often urgently recommended) may or may not be able to feel. But I frankly avow my skepticism. I think the nodules as generally described have no analogy in disease elsewhere in the body, and not often have I been able to feel them. My experience with masseurs is that they nearly always feel something—abnormal. Norström,[5] one of the first and best known writers on this subject, naively advises one to examine for the nodules during the attack of pain, as otherwise they may not be found. Obviously this means that the observer does not feel them but the patient does. Another voluminous and authoritative writer[6] says that the nodules are sometimes the size of a grain of sand (*Sandkorn*), and still others claim to palpate the ganglions of the cervical sympathetic. In the presence of these statements, a doubt seems to be not unreasonable. Furthermore, with the aid of a lubricant, it is surprising what a lot of little irregularities, kernels, strands and the like may be felt in the normal person, not to speak of lymphatic glands, which very often are palpable in persons with indurative headache — for a very good reason, as we presently shall see. There is no doubt whatsoever about the tenderness, and I have no doubt that often there are infiltrations more or less localized or diffuse; but the universality of the nodes I believe to be apocryphal. Their only real demonstration, so far as I know, is that of Auerbach.[2] From an old woman he cut out a node (*Knötchen*) the size of a hazelnut kernel. It showed increase of connective tissue, and the nerve endings apparently encircled by connective tissue. But in the muscles of a woman of the same age with no signs of indurative headache who died of pneumonia he found an exactly similar thing. In short, these localized lumps and thickenings sorely need investigation by real pathologists. Müller[6] complains that in muscular rheumatism masseurs always find something palpable, while internists assert that there are no ascertainable organic changes. Probably both have something to learn.

But nodules or no nodules, what is the cause of rheumatic headache and what is its pathology? For me, the obviously reasonable answer has come to be that the cause is an infection and the pathology probably microbic invasion of the tissues involved with the consequent reaction. And yet this idea seems to have occurred to no one very clearly, though two writers closely approach it. So good a man as Edinger,[7] who, indeed, first directed my attention to this affection some sixteen years ago, in relating a case casually mentions that the patient had frequent "colds" due to exposure to drafts where she worked. Seemingly never thinking of infection but only of the cold draft he says, "The pain is caused by getting chilled." Hartenberg[8] comes much closer. Evidently, he had a very good conception of the nature of the trouble. He says it is only part of a "pathologic process much more extended." Also he noted the concomitant arthritis of the cervical spine and swelling of lymphatic glands. Furthermore, he states that infectious diseases rarely fail to make the headache worse, and it is worthy of remark that the infections he instances are not typhoid, pneumonia and measles, but grip, coryza, pharyngitis and tonsillitis. Finally, he concludes that indurative headache, of which he speaks as "cellulitic" headache, is a "toxi-infection" from the nose or throat; that is, due to the local action of toxins arising from an infection elsewhere in the body. Telling[4] is the other author I have found who seems to have had a proper conception of the pathology. He says it is "an inflammatory exudation into fibrous tissues . . . the result either of direct microbic action or more probably of toxins."

Evidently what we need is competent histologic and bacteriologic study of the disease, with observations on the blood and on the tissues. Along this line I have nothing to offer, but some clinical observations are suggestive. In no article that I have consulted is there one word about temperature or leukocytosis. Nevertheless, more than five years ago I began to examine for these indications or results of infection. The findings are in harmony with other signs indicating an infectious process. In the acute cases, fever and leukocytosis are never absent. In the chronic cases frequently they are; but repeated examinations, especially during exacerbations of the pain, will nearly always at one time or another show a temperature of from 99 to 100 F. and a white count of from 8,600 to 9,000 or 10,000.[9] The subacute cases range between the acute and the chronic.

But even in fairly acute cases with obvious infection, both temperature and white count may be surprisingly low. In a perfectly typical case in the person of a lad of 15 years who had had a streptococcal throat, large glands in the neck, an abscess which had kept him in bed for six weeks, and a perfectly obvious arthritis of the knee, the temperature ranged from 99 to 100 F., and the leukocyte count was only 7,250. Within forty-eight hours after removal of the tonsils, the headache which had been "nearly driving him crazy" had disappeared for good, as had also the fever. Naturally, the next question is, Can this suppositious source of infection be found? I have not always succeeded in finding it, especially in the chronic cases; in the acute ones, I think I have. The source is practically always in the head — the throat, teeth, sinus, ear or suppurative rhinitis with poor drainage. Also bearing on the pathology is the experience that in acute and sometimes in subacute cases removal of this suppositious focus promptly cures the headache, with disappearance of the fever and of the leukocytosis. For instance, a young woman who had been suffering severely for two years promptly recovered when the tonsils were removed.

But I hasten to add that it is not always easy to decide where the focus is. One woman, aged 60, who gave a history of tonsillitis, had an old discharging ear and infected teeth. She got well after removal of the teeth. A woman, aged 53, who had had indurative headache for two and a half years, had suspicious teeth, and pus in the tonsils. She preferred to have the teeth out first. There was no improvement. Some months later the tonsils were taken out and soon she was greatly improved. Another woman, aged 45, had had an operation on the frontal and ethmoid sinuses ten years before. Not long afterward she had a crop

5. Norström, Gustav: Der chronische Kopfschmerz und seine Behandlung durch Massage, Leipzig, 1910.

6. Müller, A.: Der Untersuchungsbefund am rheumatisch erkrankten Muskel, Ztschr. f. klin. Med., 1911, **74**, 34-73.

7. Edinger, L.: Von den Kopfschmerzen und der Migraine, Deutsch. Klin., 1901, **6** (translation, Modern Clinical Medicine, 1908, volume on Nervous Diseases).

8. Hartenberg, M.: Les céphalées musculaires ou cellulitiques, Jour. de méd. de Paris, 1914, **26**, 187-190.

9. Just what constitutes pathologic leukocytosis in a given patient at a given time is difficult, sometimes impossible, to determine. Drawing conclusions from white counts of 8,600 to 10,000 is hazardous. But repeated accurate examinations compared with temperature and other symptoms will help to eliminate error.

of boils, later a carbuncle and then a rectal abscess. Later still, an abscess of the breast appeared. There was no history of tonsillitis, and yet her headache of nine months' duration disappeared after tonsillectomy. One patient, aged 50, who had had her headache for years, had poor nasal drainage and probably sinusitis. The sinuses could not be properly explored without operation on the septum, and as we found many infected teeth, they were extracted as the first move. The result was great relief but not complete cure, so I suppose the nose and sinuses will have to come next.

As might be expected, many times instead of an embarrassment of riches in the way of infectious foci, no focus is apparent. A woman, aged 36, seemed to have an indurative headache radiating into the mastoid region, but no focus could be found. Especially may it be noted that a well known aurist found nothing in throat or ears. Some weeks later, the patient developed double otitis media. Paracentesis of both drums was made, and with subsidence of the otitis, the headache disappeared. I cannot resist a feeling that the infection was there all the time but that it was not locally apparent.

### DIAGNOSIS

Regarding diagnosis, only a few suggestions seem to be indicated. As noted, the severity and persistence of the pain are strongly suggestive of grave organic disease. Indeed, I have known indurative headache to be mistaken for meningitis and for brain tumor, with the proposal of an operation for the latter. The distinctive features of indurative headache with normal spinal fluid, absence of Kernig's sign and of cranial nerve involvement will exclude the former. Absence of optic neuritis, of vomiting and of evidence of invasion of the cerebrum, cerebellum or cranial nerves, will exclude the latter. Severe headache, especially if worse at night, with localized tenderness, is always suggestive of syphilis. But if one has in mind the symptoms of the two diseases, differentiation ordinarily is easy. Serologic examination of blood and spinal fluid, however, may be needed for a definite conclusion.

In my experience, indurative headache is often found in connection with some other headache, especially migraine, the former being added to the latter. Then the rheumatic headache may not be recognized for what it is, but is thought to be an aggravation or variation of the migraine. Only care is needed for the differentiation. Again, a chronic neurasthenic or psychasthenic, who for years has had more or less discomfort, acquires an infection from which he gets a rheumatic headache. His complaints become more insistent and bitter, but it is thought to be the old thing, and consequently he receives no appropriate treatment. The disease is all the more misleading in this sort of patient because, as before noted, the pain may be made worse by mental or physical exertion and hence is believed to be simply a form of nervous exhaustion. Naturally, too, such a patient often has numerous phobias based on his pain. He fears that he is going to lose his mind or have a stroke, or that he is developing a brain tumor, etc., all of which leads to the conclusion that he is "hipped." Then comes a rest cure or neglect. It is in such cases especially that careful examinations are needed and that the discovery of a slight rise in temperature and in leukocyte count are of value.

Remembering that sinusitis may be the infectious focus giving rise to rheumatic headache, one naturally recognizes that the pain of both may be coexistent, but that they may have to be clinically separated. Acute or chronic middle ear disease and mastoid inflammation may be complicated by a rheumatic headache which it is important to recognize as a separate factor, the headache having been caused by the infection which started the otitis, or by the latter, as a secondary focus. I have known the mastoid to be opened for an indurative headache in which the pain and tenderness extended unusually far forward.

I might add that at least once and probably several times, I have seen face pain analogous to indurative headache.

### TREATMENT

Treatment may be divided into rational and empiric. If, as I believe, the trouble always arises from infection, the rational move is to find the origin and remove it. In the acute cases this alone will suffice. At times the relief is strikingly prompt and complete, being felt within forty-eight hours. In the subacute cases, one generally needs to add what has been found to be good: rest, heat and massage. Acetylsalicyclic acid and like remedies are not often of much use, though sometimes they seem to afford temporary relief. In the chronic cases one cannot always find a causative focus or, if it has presumably been found and extirpated, the pain continues. These are the cases in which repeated and prolonged applications of heat and persistent massage, the latter preferably immediately after application of heat for an hour or more, are indicated. The massage must be rather firm and deep, must be repeated about three times a week, and must be persisted in sometimes for many weeks. Good manual massage is infinitely preferable to mechanical vibration. Occasionally I have used the thermocautery with benefit. The point should be white hot and touched lightly and rapidly over the back of the neck as high up as the hair line will permit, the points of contact being from about one-eighth to one-fourth inch apart. If properly done, the burns need no dressing and the application can be repeated in from five to ten days. It is well to do a limited area one day and an adjoining one the next.

The prognosis is good — very much better than in chronic arthritis.[10]

25 East Washington Street.

10. In addition to the references already given, the following will be found of interest:

Auerbach, S.: Zum Wesen des sogen. Knötchen oder Schwielenkopfschmerzes, Deutsch. Ztschr. f. Nervenh., 1911, **42**, 399-408; Der Knötchen oder Schwielenkopfschmerz, Samml. klin. Vortr., No. 361.

Müller, A.: Der Muskulare Kopfschmerz, Deutsch. Ztschr. f. Nervenh., 1910, **40**, 235-290; Der Muskulare Kopfschmerz, Leipzig, 1911.

Maverick, A.: Indurative Headache, New York Med. Jour., 1913, **97**, 491.

Campbell, Harry: Discussion on Headache, Brit. Med. Jour., 1914, **2**, 578-583.

Henschen, S. E.: Studier öfver Hufondets Nevralgier, Upsala, 1881.

Rosenbach, O.: Ueber die auf myopathischer Basis beruhende Form der Migraine und über myopathische Cardalgie, Deutsch. med. Wchnschr., 1886.

Klein, E.: Handbuch der Massage und Heilgymnastik, Vienna and Leipzig, 1896.

Peritz, G.: Ueber die Ætiologie und Therapie des neurasthenischen Kopfschmerzes, des neurasthenischen Schwindels und der Migrane, Med. Klin., 1906, 1201-1203. Neuralgie, Myalgie, Berl. klin. Wchnschr., 1907, **44**, 952-956.

Cornelius, R.: Nervenpunkte, ihre Entstehung, Bedeutung und Behandlung mittels Nervenmassage, Leipzig, 1909.

Stockman, Ralph: The Causes, Pathology and Treatment of Chronic Rheumatism, Edinburgh Med. Jour., 1904, N. S. **15**, 107.

Yawger, N. S.: Chronic Rheumatic Myositis, Lancet, London, 1909, **2**, 292; Indurative Headache, THE JOURNAL A. M. A., April 24, 1909, 1316-1319.

Beling, C. C.: Indurative Headache, Tr. Med. Soc. New Jersey, June, 1912.

Rose, F.: La céphalée musculaire, Semaine méd., 1911, **31**, 145-148.

## ABSTRACT OF DISCUSSION

Dr. George E. Shambaugh, Chicago: Rhinologists are very alert when they hear a patient complain of headaches and at once examine the patient's nose and accessory sinuses. It would be very strange if he did not run across an anatomic variation of the septum. You will find it nine times out of ten, although the variation may not be conspicuous in all cases. I am becoming more and more skeptical, however, as to whether that anatomic variation can ever cause headaches. The type of anatomic variation which I believe may cause headache is the deflection which projects against the outer wall of the nose. I have never seen a case with that kind of anatomic variation corrected that the headaches did not disappear. It is very doubtful whether any anatomic variation of the septum has anything to do with headaches, except as it may be a factor in the cause of sinus trouble.

The question of the etiologic relationship of infection of the nasal sinuses to headache is very interesting. Infection in the sinuses except the frontal causes headaches almost without exception. The location of the headache is often assumed to be a good method of locating the involved sinus, but, as a matter of fact, any form of accessory sinus trouble may cause frontal headaches. Recently I had a case of one-sided headache, frontal in character, of long duration; pus was seen coming from middle meatus, but it was a case of maxillary sinus trouble. The frontal sinus was not affected at all. The headache disappeared when the maxillary sinus trouble was removed. But the most interesting question in regard to headache and sinus troubles is this: Can we have closure of a sinus which we cannot diagnose and yet have it as a cause of headache? Many rhinologists forget that this condition may be present, although it occurs rarely.

Headaches due to the focal infections that Dr. Patrick speaks of are not at all unusual. I have had the experience he relates, where the removal of an infected tonsil cleared up the patient's long-standing headaches. It is difficult to exclude entirely the possibility of the tonsils being the seat of a chronic focus of infection when there is no history of tonsillitis. Where the tonsils are large, that is easy enough, but we often find small tonsils where there is distinct evidence of pus. We also find tonsils, with no history of tonsillitis and where physical examinations fail to disclose any evidence of this trouble, yet when we remove these tonsils, we open large abscesses.

Dr. H. W. Loeb, St. Louis: In discussing this question we should consider headaches from two standpoints: those which are of local origin and those which are of focal origin. Given an abnormal condition of one of the sinuses, and we expect the typical sinus headache. Headache may be due to absorption of toxins from that focus, but it may not be a local headache. Local headaches are usually limited to one side; they come on generally in the morning, and after a certain period disappear This type of common localized headache can practically always be relieved by operation. In addition to the group of headaches which the essayist described under the name of indurated headaches, are the headaches of focal origin, the foci being either in the nose, tonsils or teeth.

Dr. Oliver Tydings, Chicago: My conception of what causes headache and what shall be done to relieve it may differ from yours. Headache may be due to nose trouble, but other pathologic conditions should be eliminated. The wife of a physician was subject to headaches for years. She consulted a gynecologist. She was curetted; her headaches continued. Then she consulted a neurologist, an ophthalmologist and a nose and throat man. The rest cure and glasses were prescribed. After three months in a hospital she returned in the same condition. She then consulted another neurologist, and a diagnosis of meningitis was made. She returned home feeling that the end was near. When proper glasses were prescribed, the nose corrected and the ethmoid opened up, the headaches were relieved. Therefore, do not operate on a nose for the relief of headaches until you have eliminated other causes.

Dr. Arthur M. Corwin, Chicago: We have had to deal with headaches for many years. We have cured some but not all of them. As Dr. Loeb stated, headaches are sometimes of focal origin. I wonder whether infective or infectious headaches would not more particularly cover, not only the sinus headache, but headaches due to all the infectious foci? We know that taking out a pair of tonsils or establishing a drain for the sinus or some other focus of infection will cure some headaches in a few hours. Why, if they are indurative, is that cure so prompt? I do not believe that "induration" explains the cause of these headaches.

I think Dr. Shambaugh has gone too far when he says that there is no anatomic deviation from the normal within the nose that will cause headache. I am sure you have all cured what is known as pressure headaches. Many of these headaches seem to be infectious when they are not; they are mechanical pressure headaches. These cases must be eliminated in discussing this question of headaches.

Dr. Charles D. Thomas, Peoria, Ill.: I am a living example of indurative headaches, and I am ready to verify many of the affirmations made by Dr. Patrick in his article. One symptom that he did not speak of, that I have constantly, is the crepitation at the occipital region. I formerly had very decided crepitation in my knee when I went up or down stairs, but after I had my infected tonsils removed, this crepitation disappeared entirely; but when I move my head, especially to the right, I still have crepitation, which is so very noisy that it seems to me every one can hear it. I do not know if that has any particular significance except that it seems to me that it is an infective condition. The state of the weather has a great deal to do with it. For instance, Monday I got my feet wet, and as it was very chilly and I had no overcoat, I spent Tuesday in bed with a headache. A chill or catching cold invariably brings on this headache. The question of infection in my own case is somewhat doubtful. Dr. Shambaugh has examined me thoroughly as regards infection of any of the sinuses, I had my tonsils taken out, I have been roentgenographed and no infected sinus has ever been demonstrated. I believe I have subacute infection of my maxillary sinuses, because some years ago I had a very sharp attack of sinusitis.

As to the question of its being bilateral, my trouble is entirely unilateral. It always comes on the right side; the pressure on the nerve is excruciating; the pain is continuous, and I have the enlarged lymph nodes Dr. Patrick mentioned. My trouble comes on almost invariably in the afternoon or early in the morning. I have a warning of it fairly early, about 11:30 or 12, and sometimes by taking medicine, especially alkalis—I take 100 grains of sodium bicarbonate, sometimes with magnesium—I can ward it off.

Dr. Hugh T. Patrick, Chicago: Why indurative? I do not know. I did not coin the term at all. It is a very poor name for this headache, but it has been used for it. I added rheumatic because it has sometimes been called rheumatic. In the absence of any better term I would prefer to call them rheumatic headaches, because rheumatism comes from an infectious process, and this is a headache due to infection, in my opinion. To call it an infected headache would not do, because there are so many headaches due to infection which are not this headache. It has been claimed that this is a sort of vague, indefinite kind of thing. I am sorry I did not make myself understood. It is exceedingly definite. We seldom have any difficulty in deciding that our patients have an indurative rheumatic headache. It is nearly always in the back of the head. There is practically always evidence of infection, and the patient gets well when the infection is removed. It is not to be confused with a sinus headache nor with a pressure headache, nor with a headache due to generalized infection, with fever, etc., which may occur in any infection, such as typhoid, gallbladder disease, measles or tonsillitis. This is a localized process and I do not know how one of these headaches can disappear in forty-eight hours. It does not seem reasonable. I am glad Dr. Thomas used the word "lymph nodes." Frequently that term is applied to the lymphatic nodes in the neck, but these are not the nodules that I have been describing as being peculiar and specific. They are not of particular importance in either the diagnosis or pathology of this condition. I tried to emphasize that I do not know a whole lot about it, but my paper is largely suggestive; if these headaches do occur, they are a distinct entity, and the patients get well when treated properly.

# INTERPRETATION OF NEGATIVE LABORATORY FINDINGS IN SYPHILIS

## WITH SPECIAL REFERENCE TO TREATMENT *

ALBERT E. STERNE, A.B., M.D.
Professor of Nervous and Mental Diseases, Indiana University School of Medicine
INDIANAPOLIS

We begin the consideration of this subject with several postulates:

1. A positive Wassermann reaction in the temperate zone spells syphilis, and only syphilis.

2. A negative or mild degree Wassermann reaction does not, by any means, indicate the absence of syphilis.

3. Syphilis of the central nervous system is only part of general constitutional syphilis; it never occurs as a real entity and, furthermore, the nervous system is invaded early and not late, as is generally supposed.

4. It is absolutely necessary, especially in doubtful cases, to correlate laboratory and clinical data. The Wassermann and other serologic tests are merely symptoms, which, like other physical signs, may or may not be present. They are extremely valuable, but not as determining as the objective clinical syndrome, notably when not definitely manifest. The laboratory is not a short cut to diagnosis.

5. Many laboratorians, while they may be excellent technicians, are incapable of determining the exact interpretation of the serologic reaction in debatable or doubtful cases. This decision rests with the clinician.

6. Even with a positive Wassermann reaction a given syndrome in a known syphilitic patient is not always due to syphilis.

Each of these postulates requires some elucidation and comment.

POSTULATE 1.—*A positive Wassermann reaction in the temperate zone denotes syphilis only.*

Admitting that certain exceptions to the above given rule exist, and that a positive Wassermann reaction of moderate, or even high degree, occurs in the temperate zone, in conditions other than syphilis, such as pronounced malaria and other plasmodial affections, and in conditions of tropical disease migrate into the temperate zone, and again admitting that minor degrees of a positive Wassermann reaction may occur in certain other debatable conditions, nevertheless, as a routine dictum, we may safely assert that a positive Wassermann reaction spells syphilis and syphilis only. The exceptional conditions differ so markedly clinically, that there should be no difficulty in ruling between them.

Recently it has been asserted that a positive blood-serum Wassermann reaction occurs in tuberculosis. It were well to bear in mind that there is no antagonism between syphilis and tuberculosis. The two may occur coincidentally in the same subject; they often do, in fact. Spinal fluid research in tuberculosis has, I believe, not been sufficiently carried on to decide whether the alleged blood serum claim can be upheld.

POSTULATE 2.—*A negative Wassermann reaction does not indicate absence of syphilis.*

The negative phase requires careful analysis, and there are several different aspects involved in the negative side which require consideration. Before entering on their discussion, it will be well to establish clearly in our minds, certain facts in respect to syphilis of the nervous system, some of which, at least, are not generally recognized. This involves, in a general way, a discussion of Postulates 3, 4 and 5.

POSTULATES 3, 4 and 5.—The central nervous system is never, alone, involved in this disease; the other body tissues and organs are affected by it, inasmuch as syphilis is always a constitutional affection. Clinically, the symptomatology from the side of the nervous system may preponderate, and so far dominate, as to force the evidence of participation of other, even important, organs, into the background. However, the reverse is more likely to prove true, and we are much more likely to fail to realize the intrinsic participation of the central nervous system in the ordinary case of syphilis, because no signs of organic involvement of the brain or cord are manifested.

As a matter of fact, the central nervous system is involved, intrinsically, in every case of syphilis and, furthermore, it is involved early in the course of the disease and not late, as is commonly supposed. It is true that lesions, deep within the tissue of the neural system, are apt to be late manifestations, though not infrequently severe organic lesions of brain and cord occur within a few weeks of the initial infection. The syphilotoxins of the so-called secondary stage, however, affect the nervous system along with all the rest of the body organs, and it is at this period, especially, that a recognition of this fact by the physician may prove of the utmost service to the patient. Examination of the spinal fluid along with the examination of the blood, in the early stages of the disease, is far more important than in the later stages, but such examination is not ordinarily made.

In the syphilotoxic or so-called secondary stage, we are prone to encounter the characteristic evidence of toxemia in the mucoid and skin eruptions (which are in every sense analogous to the mucoid and skin eruptions of the infectious exanthems) associated with headache and often vertigo; the latter symptoms are strict indications of involvement of the nervous system and their occurence calls for investigation of the spinal fluid, as well as the blood. If there is any virtue or value in intraspinal medication, and I am not yet fully convinced that intramedullary injections possess unquestionable advantage, it should be applied at this stage, instead of, as now, waiting for the development of organic involvement of brain and cord, usually several years after the primary effect, when even intensive treatment is apt to fail. The most favorable side of our modern intensive specific therapy lies in the prevention of the disastrous late lesions of the nervous system, rather than in any attempt to arrest or to cure them after they have once become established. However, when, late or early, lesions of the brain and cord become manifest, whether of focal or diffuse type, we must again remember that the pathology affects the entire system. Tabes and other tract affections of the cord, transverse and diffuse myelitis, paresis and taboparesis are all clinical types of neural syphilis, but are merely part of general constitutional syphilis.

Years ago, prior to our present laboratory methods, good clinicians and, sometimes, mediocre ones, were perfectly capable of diagnosing syphilis in all of its

* Read before the Section on Nervous and Mental Diseases at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

aspects and relied entirely on their knowledge and clinical experience to arrive at definite conclusions. Today, they continue to rely on their keen diagnostic sense, but wisely substantiate their clinical conclusions by every laboratory test of value, though they are not absolutely controlled, or guided, by the laboratory data, which they recognize only as a part of thorough physical examination and not as a short cut to diagnosis. Unfortunately the reverse is apt to be true among busy general practitioners or so-called specialists, who either have not the ability, or the sense of deep personal responsibility in diagnosis, and they are inclined blindly to accept the verdict of the laboratory and be guided by it, without taking into consideration the clinical evidence, either in the affirmative or negative. The general run of the profession has not yet grasped the fact that all laboratory tests are relative and not absolute in value.

This is an age of strict scientific research, as it should be, particularly in medicine and surgery, and it becomes all the more necessary, on that account, to scrutinize carefully the reliability of the source of information on which good clinicians await only corroborative evidence and poor or careless clinicians place their boundless faith. As a general thing, the relationship between laboratorian and clinician is apt to be entirely too loose; this is particularly true as respects the common run of the profession and the large commercial laboratories, often far distant from the physician who sends in his material for analysis.

The careful diagnostician assures himself, to the largest degree, of the capability of the man to whom he entrusts his laboratory work, and after convincing himself of the thoroughness, technical ability and absolute interpretative reliability of the laboratorian, works with the latter in complete harmony and teamplay, consults with him in every sense, debating pro and con the clinical and laboratory evidence in any doubtful case. There is here the much-to-be-desired and necessary cooperation, essential to completeness of diagnosis and safety of the patient, and this is manifestly impossible of attainment in the strictly commercial laboratories, very few of which are reliable.

The first important essential, therefore, is to assure oneself of the absolute technical and interpretative reliability of the serologist or of the laboratory to whom our serums are submitted.

Now how shall we analyze his report? What does a positive Wassermann reaction denote? Does it signify that the disease itself is active or that the physical system is conducting an active fight against the malady? Does a negative Wassermann reaction indicate no syphilis or that the spirochetes are dormant and the body resistance supreme for the moment? Does a positive + + +, for instance, signify a major disease activity and minor + resistance or practically the reverse? Furthermore, who shall decide that a + or even a + + represents a positive Wassermann?

At present, we construe a positive ( + + or greater) report merely into necessity for specific treatment; and that is, after all, the most important, outstanding factor from the patient's point of view.

What then, shall we, as physicians do, in the face of a negative laboratory dictum, especially in a case of debatable type, either with or without ascertainable history of previous infection.

May we rest secure and say to the patient, "No syphilis, no treatment"?

It is an extremely important matter, both to patient and medical adviser, to determine this question. On the one hand, we might subject a nonsyphilitic subject to time-taking, very expensive treatment, such as would be indicated were a positive Wassermann reaction present. On the other, we would seriously err in counseling no specific treatment, when the patient in reality was suffering with syphilis and required intensive therapy.

In my experience, it has been far more frequent to mistake a negative or mild degree Wassermann reaction as an indication for no treatment.

Repeatedly, I have seen patients who had been advised, to their great, sometimes irreparable, damage, that antisyphilitic treatment was unnecessary, by physicians of presumed excellent standing, purely on the strength of a negative serum Wassermann reaction — most frequently when no spinal fluid examination had been made. When, sometimes months, sometimes years, later, these same patients came into my care, there was manifestly distinct, clinically recognizable, syphilis of the nervous system, which might have been prevented had proper treatment been instituted in the face of a negative Wassermann reaction years before.

It is claimed by many laboratories and syphilographers that a serum Wassermann reaction may be provoked in a suspicious case by a small intravenous dose of arsphenamin twenty-four hours previously given, or by moderate doses of iodids for a period of from two to three weeks. This provocative possibility is denied by many, but, at present, it would appear safest in the interests of the patient, and of diagnosis, to subject the suspect to such measures as might insure a more definite laboratory finding. Here a note of warning may well be sounded. Undoubtedly, at times, indiscreet or tactless words by the physician affect the psychology of certain persons deleteriously, so that a word of caution may not be out of place. Unless the doctor is reasonably certain that syphilis is really in play, he should refrain from alarming any patient. The physician should study the individual mental attitude of every person consulting him and be certain that his advice to the patient be not misconstrued. We talk too glibly about the Wassermann test.

The only safe guide in doubtful cases is to remember that all laboratory tests, whether of blood or spinal fluid, are merely symptoms, which like any other symptom or group of symptoms, may at times be absent. Like most cardinal signs in any disease, the positive Wassermann reaction will usually be found present in the vast majority of patients with active syphilis, but is frequently absent or only faintly indicated, even when the disease is manifestly in play.

That this is true is clearly substantiated by the reaction of the blood serum—less frequently the cerebrospinal fluid—in concrete instances, as shown by the Wassermann reaction before, during and after treatment, intravenously, alone, or in combination with intramedullary injections.

It is a common experience to find the Wassermann reaction varying in degree in any given case or group of cases. Often it is reduced to nil under the influence of arsphenamin, to again become active while yet the patient is under intense therapy. It is this very fact which renders it difficult to determine just when the case has been sufficiently treated. The mere reduction in strength of a one-time positive Wassermann reaction should not alone constitute a criterion of cure.

The clinical syndrome, otherwise, must improve *pari passu* with the serologic findings. If this be not the case, then little or no headway against the spirochetes can be counted on.

If the clinical syndrome in specific cases be favorably affected, there is good reason to believe that the patient is deriving benefit from treatment, even though the laboratory findings fail to vary proportionately. Up to date, however, the laboratory data form our best corroborative index as to the apparent security of the patient from probable reactivation.

It should be borne in mind that serum reactions are much more liable to vary than do the spinal fluid tests. The latter appear the more trustworthy, not only because of their greater stability, but also by reason of their multiplicity and, therefore, the possibility of checking up and correlating the other tests—leukocyte count, globulin increase and colloidal gold test—with the Wassermann.

The blood serum Wassermann test is of great diagnostic value, but of questionable prognostic worth. The spinal fluid tests are not alone diagnostic in character, but assume both differential and prognostic virtue. This is notably true of the Lange (colloidal gold) color curve. By it, when accurately done, we are enabled to determine with some assurance of certainty, the character of the pathologic process transpiring in brain and cord, differentiating between inflammatory encephalitic-meningeal affections and probable degenerative tissue changes. True, this is not absolutely certain, but it forms a fairly reliable working index differentially and as to effects of treatment, and up to a certain point, as to whether treatment would be effective enough to warrant trial.

Where clear-cut degeneration of brain cells, as in true paresis, or cord tract and transverse lesions, tabosyphilis and myelitis syphilitica, is manifest, the effect of treatment is so questionable that one should gravely consider matters of time and expense among those who can ill afford to make financial sacrifices. Unfortunately, no matter how expert the clinician, we cannot with positiveness assert how much, in a given neurologic syphilitic syndrome, depends on inflammation and how much on degeneration. The experience in the past few years of intensive therapy, both with and without conjoined intraspinal treatment, should influence us always to give the patient the benefit of at least a trial, unless the case is so far advanced as to be apparently hopeless, by all standards of large experience, so that monetary sacrifice would be unjustified.

POSTULATE 6.—*Even with a positive Wassermann reaction, a given syndrome in a known syphilitic may not be due to syphilis.*

Not infrequently we find syphilitics suffering from nonsyphilitic affections, and it often becomes a difficult problem to solve therapeutically. Quite naturally the physician would be prone to conclude that such patients require intensive specific measures, and very likely many of them do, but the complex against which efforts are directed fails to yield. If this transpire, the doctor should not persist in the opinion that syphilis is responsible, but should direct his research otherwise. He is, however, always erring on the side of safety to bar out syphilis by adequate therapeutic attempt.

Another point to remember is that extraneous, often accidental, factors, not infrequently start a hitherto latent syphilis into activity. This, in my experience, has been particularly true in traumatisms to the head and back, to sun and heat stroke and to acute infections, such as grip, which are peculiarly liable to affect the nervous system. At the present time, too, we should not lose sight of the activating influence of war injuries and of war strain.

A final and extremely important phase of this entire subject is presented by the researches of Warthin,[1] who has demonstrated spirochetes, postmortem, in practically every body-organ and tissue in many persons, who, intra vitam, had repeatedly given negative serologic returns. Are we to infer from Warthin's work that all our laboratory tests, and even our intensive antisyphilitic treatment, are worthless?

Unless I quite misunderstand Warthin's attitude, he has concluded that neither the Wassermann test nor any other laboratory test, as yet devised, has proved in any way trustworthy, believing that demonstrable spirochetosis exists too often to escape detection by a really valid test.

I, in common with most clinicians here and abroad, have faith in the Wassermann reaction, and other associated blood and spinal fluid reactions, always, however, weighed thoroughly in the clinical balance, but wish to emphasize the great value of Warthin's revelations in not too rashly coming to the verdict of negative serum reaction, negative syphilis.

Spirochetes in organs and tissues after death, of course, spell syphilis at some period of life, but it remains yet to be proved that these organisms, morphologically intact, may not rest indefinitely in the tissues, fixed and latent, without clinically active complexes in sequence. Warthin's work again serves well to emphasize the necessity for a test more reliable even than the Wassermann.

SUMMARY

1. A positive Wassermann reaction of blood, and especially of spinal fluid, spells syphilis and syphilis only.

2. A negative serum Wassermann reaction and even a negative spinal fluid Wassermann reaction does not strictly indicate the absence of syphilis.

3. Laboratory tests are merely clinical signs, which at times may be present or absent, like other symptoms; spinal fluid tests should always be made together with blood serum tests.

4. Correct interpretation can be made only by weighing carefully the clinical evidence, with the serologic reports, especially when the latter are negative. This cannot be too emphatically emphasized.

5. Laboratorian and clinician should hold far closer scientific relationship than is now usual. They should be mutually helpful.

6. The laboratory findings should fit into the clinical syndrome and not vice versa.

7. And unless there be wise, deliberative interpretation of laboratory data, especially negative data, in neurologic and other cases, serious errors in diagnosis and treatment will continue.

NOTE.—Since the foregoing was written, a paper by Drs. Larkin, Levy and Fordyce (THE JOURNAL, June 1, 1918, p. 1589) refers to this subject in most timely way. The reader is advised to study this article. Its careful perusal will serve to emphasize what has herein been stated.

1. Warthin, A. S.: The Persistence of Active Lesions and Spirochetes in the Tissues of Clinically Inactive or "Cured" Syphilis, Am. Jour. Med. Sc., 1916, **152**, 508.

## ABSTRACT OF DISCUSSION

Dr. C. R. Ball, St. Paul: This is a subject that I have been interested in for a long time. I presented before this section the first paper on the four reactions. Since that time, in my own laboratory and clinical work, I have very carefully followed these reactions almost daily. As illustrative of one point I will relate the case of a patient, a man of 30, who had a fairly good history of having had a chancre some six years ago. When I first saw him he had not one single hair on his head; his eyebrows were gone, and his finger and toe nails had a marked degree of onychia. He stated that he had a negative serum Wassermann. I made spinal fluid tests and found the reaction serobiologically to be absolutely negative, yet the clinical symptoms would have caused one to conclude that this was a case of syphilis. He responded well to specific treatment, and in six months he had enough hair on the back of his head to require a hair-cut. So far as a cure is concerned, the reactions may be of value in determining whether or not recovery has taken place, but when we consider the patient just described we must conclude that it is not a reliable criterion.

On the other hand, we are familiar with that type of patients who come to us with positive reactions, but who look the picture of health and present no clinical symptoms. Three years ago a man came to me just after attending the funeral of his brother who had died of paresis. He had another brother suffering from locomotor ataxia, and, remembering that he had contracted syphilis some fifteen to twenty years before, he began to worry over himself. Physically and clinically he was well. He had a negative serum Wassermann, but his blood reacted typically to what we term the characteristic paretic reactions, the colloidal gold, the globulin, the cell count and the Wassermann, there being a + + + or + + + + Wassermann with the minimum amount of spinal fluid. A week or two ago I saw this man again and he was free from any symptoms and apparently in perfect condition. The longer I deal with these reactions the more I feel that their usefulness at present lies in what we get out of them in the way of diagnosis. I have been much interested in the treatment of these conditions. It seems to me that we must compare syphilis with tuberculosis. Dr. Riggs and Dr. Sterne have pointed out that syphilis is not an isolated disease of the nervous system, but that it is a constitutional disease, and that the nervous system is involved at the same time that the rest of the body is involved. Years ago we believed that to give the tuberculous patient large doses of creosote would kill the tubercle bacillus, and we have been passing through much that same phase with reference to methods of intensive treatment of syphilis.

Dr. Julius Grinker, Chicago: Most of Dr. Sterne's statements can be subscribed to because every one of us has had simliar experience with the Wassermann tests. One point on which Dr. Sterne did not lay stress, and which I wish to emphasize, is that we occasionally get a negative Wassermann in a very advanced case of syphilitic infection. Not alone does this occur occasionally in paresis, but most frequently in advanced cases of tabes. Some years ago, for the first time in Chicago, I injected five patients intraspinally, following the Swift-Ellis treatment. One case was diagnosed as tabes from the symptoms present, but it was not an advanced case. I presented the patient before the medical society as one who had improved under Swift-Ellis treatment—that this treatment had done a great deal of good, as the Wassermann was made negative after being strongly positive. This man left the hospital, and returned a year later with a most advanced type of tabes, was extremely ataxic, had Argyll Robertson pupil, intense pain, sphincter incontinence, etc. But because of the negative Wassermann test and other signs that were negative we waited for corroborative evidence. We took specimens of spinal fluid and blood, and the tests made were absolutely negative, yet the man was advanced to a very bad case of tabes and could not be cured by any treatment.

I have tried the Swift-Ellis treatment in paresis, and in one case I was extremely proud of the results. The patient was very violent, and for this reason had been thrown out of three different rest cures and one hospital. We finally succeeded in quieting his mental symptoms, he became rational and is today going about and is able to enter my office without difficulty. That patient, though he has improved mentally, has developed the physical signs more markedly after intensive treatment than before, showing that the disease relentlessly progresses just the same, causing its physical signs. Whereas he had no Argyll Robertson, although on both sides he had a sluggish pupillary light reaction, he now has a complete Argyll Robertson. How long he will live I do not know, but mentally he was benefited by the Swift-Ellis treatment, and some other patients who I am now treating, both tabetics and paretics, have shown remarkable improvement. I am still looking for the cures in paresis and tabes.

Dr. Walter Timme, New York: In this connection I wish to mention a point brought out by Dr. Sterne, namely: That in the temperate zones a positive Wassermann practically means syphilis. In the last two or three years I have had an opportunity to examine many cases of lead intoxication, largely those without peripheral lesions, affecting the central nervous system and giving the symptoms of lead encephalitis; and these cases invariably give a positive Wassermann. Sir Thomas Oliver reports the same condition as being present in the lead workers in English mines, and similar reports have come from Paris. In New York, besides our own findings, Cyrus Field has reported several such cases. Other cases have been reported from South America, with the statement that clinical syphilis could be excluded. One particular case that I have in mind may throw some light on the subject: A boy, 14 years of age, came to me suffering with what looked like juvenile paresis, and his condition had followed more or less quickly his occupation in a painter's shop, his work consisting of sandpapering off of the paint preparatory to repainting. Within a few weeks after entering on that occupation he began to show the signs of loss of memory, intense headaches, and speech disturbances, such as occur in paresis. The other members of the family were examined, and all gave a negative history and negative findings as to syphilis, yet this boy showed a positive Wassermann reaction in the blood and cerebrospinal fluid. He improved very markedly under treatment for lead intoxication. He was given no antisyphilitic treatment whatsoever, and left, not cured, but very much improved. That is a case in which syphilis had almost to be excluded, and yet it is a case corroborative of the findings of other clinicians throughout the world.

Dr. Elmer E. Southard, Boston: In respect to what Dr. Grinker said, I would ask the names of the distinguished psychiatrists and alienists who have cured paresis. I am not aware of any such cures, by men distinguished or otherwise. They may paint the topic in a rosy hue and try to encourage one, but it looks to me as if it was going far to speak of a cure.

I would like to ask Dr. Sterne what his medicolegal answer would be in a case such as that afforded by his title. I want to cite a supposititious case. A man who has been awarded money and then fallen into a paretic state, as he thought, with amnesia, with stupor, with symptoms that were undoubtedly paretic, clinically speaking, was then treated rather successfully so that all his laboratory signs, which had been positive, became negative; no mental symptoms are present and he has nothing left but the Argyll Robertson pupil. He now is earning $25 a week, but if he could get into a certain trade he would be able to make much more money. He came to our hospital for a letter of approval. What is the answer to this question?

Dr. Andrew L. Skoog, Kansas City: Dr. Sterne has called attention to several valuable points. Regarding the opinions of general practitioners concerning the value of laboratory findings in these cases, it has been my observation that their views are quite variable. You will find one group of practitioners who throw aside the laboratory findings entirely; another group of men, as indicated here, rely on the laboratory findings alone. As Dr. Sterne has pointed out, that is absurd, in that not infrequently we get negative findings in both blood and spinal fluid, whereas there are undoubtedly

positive evidences of syphilitic disease. There is no doubt but that the spinal fluid analysis is of more importance than the blood analysis for syphilis of the central nervous system. When we analyze the seat of the disease we must bear in mind that syphilis is a disease that is attracted to the blood vessels and neighboring tissues. The pia mater is intimately associated with the spaces which furnish the spinal fluid; therefore it is quite readily conceded that in syphilis bodies are thrown out in the spinal fluid which will give us our findings and that there will be consequent leukocytosis and other evidences of the disease.

DR. FRANK P. NORBURY, Springfield, Ill.: I would like to report a case. A woman, married, had been using the lead acetate solution with the result of lead poisoning and development of symptoms of syphilopsychosis type. The laboratory findings were those of a positive Wassermann. I supposed we had to deal with syphilis in connection with lead poisoning, but the clinical history of lead poisoning was definite so far as the findings were concerned. Recovery was effected under antilead treatment. So far as other findings are concerned, I do not know anything about that, as the patient has disappeared from observation.

In regard to what Dr. Ball has said as to the diagnostic value of the Wassermann, my associate and I have taken the Wassermann in all cases, and in several cases, especially in women whose social status was undoubted, we have noted what might be called a neurasthenic condition, and yet it is not a definite neurasthenic condition either; it is more of a restless irritability, with inability to get along at home in respect to the social environment and disturbed in many ways. In several of those cases we have found the positive Wassermann, leading us to believe that that may have and does have to do with the condition present. Under appropriate treatment these patients improve and many have returned home. I do not know what the findings will be later. One case under observation has developed paresis, so this was the preparetic irritation which we saw.

DR. FRANCIS X. DERCUM, Philadelphia: I am very glad to see the emphasis laid on the clinical findings. When the Wassermann reaction was first brought before the profession there was a stampede to the laboratory, but we are now coming back to a deeper consideration of the clinical symptoms. I want to call attention to a point connected with tension, and that is the great value of spinal drainage. I do not think this point is fully appreciated. It is not sufficient to withdraw five or six cubic centimeters; you must withdraw sixty or seventy cubic centimeters. In carrying out this procedure we have not had a single mishap, and we have made many spinal drainages. It seems to me the benefit that accrues may be explained as follows: In the first place, in tabes and paresis both the spinal fluid and the cord are under great pressure, and under these circumstances the amount of fluid entering the cord must be diminished. If the pressure is reduced the cord must become hyperemic, and perhaps some of the astounding results we sometimes get in tabes from repeated drainage, every ten days or two weeks, even in the absence of other treatment, is explained by this. Drainage, absolute and complete, is a point of great value.

DR. G. A. MOLEEN, Denver: I am not willing to take the Wassermann reaction from the sphere of contributory evidence. I think it is going to remain there for some time to come, and we must be guided chiefly by the clinical symptoms. I also want to bear testimony to the extreme value of drainage of the spinal cord. However, I must say that even though I had discussed the matter with Dr. Dercum, I felt some hesitation and fear, which I think we would all feel, on the first thought of draining every bit of fluid from the spinal canal. After Dr. Dercum had placed the matter on record I drained in quite a number of cases, and when I drained completely, every one of them would drop a cell count anywhere from 150 to 300 cells, after eight, ten or fifteen drainages, to something under ten. The principal point I wished to make, however, is with reference to the general evidences of infection of the nervous system and the treatment to be applied in accordance with that view. I do not think we are willing to take the position that every case of specific infection should be intraspinally treated because of fear of infection of the nervous system. We know that most of the cases of syphilis do not become neurosyphilitic. I do think the infection of the nervous system itself is nearly always indicated by the laboratory findings in the spinal fluid, and I think we have a great many cases which show positive blood reactions and no evidence in the spinal fluid. I do not think we are ready to accept the views that have been expressed, especially by McIntosh, that the nervous system is sensitized in the secondary stage of syphilis and that we have the so-called psychic symptoms of an anaphylactic reaction. In other words, I am opposed to the view that the general infection of syphilis is necessarily an infection of the nervous system, although I am quite willing to accept the view that no syphilis, no paresis and no tabes.

DR. OTTO G. FREYERMUTH, San Francisco: Dr. Ball brought out the very important fact that one could have a latent syphilis without any laboratory findings, and he showed how he continued treatment with very marked continuous absence of laboratory findings. I would like to ask Dr. Ball if, after he had instituted the antisyphilitic treatment in the case he referred to, he took the laboratory findings then to determine whether or not there was any evidence of positive syphilis. I do not feel that we are justified in excluding our laboratory findings entirely, yet we should not place too much stress on them. But, if in the laboratory tests of the spinal fluid we should find a + + + positive Wassermann, a high cell count, a positive globulin and a positive colloidal gold, I think there can be no question of syphilis in that particular case. But in the presence of a positive Wassermann alone, and only one or two plus, I would certainly hesitate before giving a positive diagnosis of syphilis. The statement has been made that under the antisyphilitic treatment and the Swift-Ellis drainage, certain mental manifestations had cleared, but that later on the tabetic manifestations were intensified. My experience in that respect is that the mental condition cleared up due to the releasing of the spinal fluid pressure, and, perhaps, the Swift-Ellis treatment had nothing whatever to do therapeutically with the mental conditions. My experience has been that drainage is a great necessity. The work done by Dr. Mehrtens of the Stanford Clinic would show how we can improve a great deal on the drainage by the modified Swift-Ellis treatment.

DR. TOM B. THROCKMORTON, Des Moines: The statement made by Dr. Dercum concerning the use of drainage of the lumbar sac in these cases is of sufficient importance to attest to the value of this method as an adjuvant in treatment. About three years ago Dr. Dercum told me about this work, and since then I have used this method quite extensively in cases in which I could have patients confined either at home or in hospital service. In the vast majority of instances in which there were prodromes of threatened crises in tabes, I have prevented or entirely alleviated those symptoms which are so annoying in cases of tabes with spinal root irritation, by using the drainage method.

DR. WALTER F. SCHALLER, San Francisco: The work of Dr. Henry G. Mehrtens in the Stanford Clinic is based on the attempt to increase the permeability of the meninges or the choroid plexus to the passage of drugs administered intravenously. In order to accomplish this, an intraspinal injection of the patient's blood serum or horse serum is made, and after a sufficient interval of time for the meningeal reaction to take place the drug is given by the ordinary intravenous route. By this method sodium iodid is found to pass into the cerebrospinal fluid. We are now using arsphenamin by the method which is in effect a reversal of the usual procedure by the Swift-Ellis treatment.

DR. JOSEPH BYRNE, New York: It seems to me that we have struck the little snag that is so common in the diagnostics of medicine when we lose sight of the logical evaluation of things. Some people are keener in perception and logical evaluation of evidence than others. And it impresses me as very strange how much importance we attach sometimes to a negative finding. A negative finding must always be taken as just a negative finding. If we want to attach any impor-

tance to it we must follow the corroborative method as in all reasoning by induction. We must not attach too much importance to negative conclusions based on one or two examinations. We may have a positive spinal fluid with no clinical signs; then, again, we may have a negative spinal fluid with positive clinical signs. We must always take what is primary and fundamental as far as diagnostics go, namely, the positive thing. Give that its valuation and then search for corroboration. Negative laboratory findings can never nullify positive clinical evidence. Then, again, we have the problems that are raised by Dr. Timme's case. I do not believe, however, that Dr. Timme has been able to exclude syphilis. Dr. Dercum spoke of positive clinical findings. We have of late been too prone to overlook the value of accurate, well-recorded clinical studies. Certainly the men of fifty or sixty years ago were infinitely our superiors in the study and evaluation of clinical evidence. It is to be hoped that we will finally come back to the true evaluation of positive and negative findings, whether these come from the laboratory or from clinical observation.

Dr. Joseph M. Aikin, Omaha: The clinical findings are growing in importance. The laboratory findings are of great value as contributory evidence in diagnosis. But I believe that many men in general practice have given them a place of paramount importance. A case by way of illustration: A lady under 30 sent one of the surgeons in our city a telegram to be ready to operate on her at a certain hour in the forenoon in one of the hospitals. The surgeon met the patient, refused to operate, and asked me to see the case. It was a frank case, clinically speaking, of syphilis. It was said to be a case of gallstone trouble. Under antisyphilitic treatment we had splendid results. Examination of the blood and spinal fluid was made by a very good laboratory man, and he said that it was not a case of syphilis. I presented the case to my students and they voted unanimously that the case was one of syphilis irrespective of what the laboratory findings showed.

Dr. Albert E. Sterne, Indianapolis: Relative to Dr. Timme's case, while it is true that the laboratory findings in cases of encephalopathy of the lead type simulate those of syphilis, there is one distinctive feature and that is the basophilia which occurs in lead cases and not in syphilis, and that should bar out syphilis in these cases. I cannot answer Dr. Southard's question without seeing the man. I was glad to hear the emphasis accorded to what I tried to bring out. Papers read here are published in a general medical journal; we are not now just talking among ourselves, but what we say goes out to the profession as a whole. And there is no questioning the assertion that the general profession does not fully realize the fact that the laboratory is being used as a short cut, not alone in the diagnosis and treatment of syphilis, but in many other diseases, pulmonary tuberculosis, for instance. It is a question for the clinician to decide whether he has a case of tuberculosis to deal with, not because there are tubercle bacilli in the sputum, but because the physical signs definitely point to such an affection. In respect to the Wassermann test, I call attention to this fact: Since this paper was written a reply has been made by Fordyce and his co-workers to Symonds' suggestions as to the value of the Wassermann reaction. Fordyce emphasizes the positive value of the Wassermann reaction, and his paper is extremely valuable. Symonds' article would seem to indicate that the Wassermann test is valueless. Warthin, again, absolutely stands on the proposition that there is no valid test for syphilis. He simply asserts that he arrives at this conclusion, because spirochetes can be demonstrated after death in individuals giving negative laboratory tests during life. And this is true, but the presence of the spirochetes after death simply indicates that during the life of the individual he had acquired syphilis, and that is all. Spirochetes may remain dormant and fixed in the tissues for years and give no laboratory reaction, such as we know. I do not think a wise clinician would wholly rely on laboratory findings, neither would he take the point of view that there is no value to these tests. There is a swing of the pendulum in the opposite direction now. Many men have come to the view that there may be nothing in the Wassermann, and I think that is wrong. The Wassermann is without doubt an extremely valuable reaction and we should hold to it, but the Wassermann, as generally made, may be valueless. In the first place, a lot of people who cannot make them think they can make Wassermanns, and, in the second place, there is no standardization of technic for a Wassermann reaction, either of the blood or spinal fluid. We should have standardized methods, and until we have these, a statement of the method employed should accompany the laboratory report to guide the clinician as to its comparative value. As to sending serums to a large commercial laboratory, we must know what condition the serums are in when they reach the laboratory. The men in charge want the $5 or $10, as the case may be, therefore they are not going to write back that the serum arrived in such condition they could not use it. There is nothing of reliability to be attached to a test made under such circumstances. With reference to Dr. Moleen's point of view, I said very emphatically that I was not convinced that intraspinal treatment had the value which is ascribed to it by some. After many years of use, I feel that I can subscribe to the intensive intravenous treatment associated with spinal drainage. Intravenous injection is the method which has given me by far the best results. I am getting away from intraspinal injections, but doing more and more spinal drainage together with intravenous intensive medication.

## VISCERAL SYMPTOMATOLOGY IN NERVOUS DISEASES

### GRAVE DANGERS OF MISINTERPRETATION AND OF UNNECESSARY SURGICAL INTERVENTION *

FRANCIS X. DERCUM, M.D.
PHILADELPHIA

At the present day, owing to the development of the various specialties, a development which has gradually become more and more intensive, the proper values are not always assigned to the symptoms presented by a given case. A physician accustomed daily to observe his patients from a single point of view is naturally in danger of acquiring a narrowed horizon. This danger can only be avoided if he keep in touch in greater or less degree with the other departments of medicine, especially with the great field of neurology. The specialist naturally has his attention attracted to some one organ or group of organs; perhaps it is the stomach, the heart, the genito-urinary apparatus, or perhaps a special sense organ. It may be that the symptoms presented owe their origin exclusively to the local conditions, or it may be that the latter form but a part of a much larger symptom-group. To assign to a special symptom its proper value at once becomes a matter of great importance. On the correct solution of this problem depends not only the diagnosis, but the subsequent treatment and very frequently the question of a surgical interference. I may add that in the field here presented crass differences of opinion have from time to time obtained, and that it is today a territory in which a veritable struggle is taking place; at times between the internist and the neurologist, but much more frequently between the internist or neurologist on the one hand and the surgeon on the other. In no department of medicine does this become more apparent than in neurology. Here, both in functional and organic nervous diseases, the affections may express themselves by visceral symp-

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toms or by symptoms that simulate visceral disease. That great liability to error arises here at once becomes evident; error at times shared by the internist but more frequently by the surgeon. This error has its origin in an indifference to the subject of nervous diseases, an indifference which leads to an inadequate and at times to a hopelessly perverted conception of the disease from which a given patient is suffering.

Perhaps this condition of affairs is not altogether the fault of the internist or of the surgeon. Neurologists have too frequently given themselves up to vague speculations and, at times, even to metaphysical explanations. Of late years, too, a theory has found its way into medical literature, according to which every phenomenon presented by patients suffering from nervous or mental affections is of psychogenic origin. Not only are nervous symptoms thus deprived of any material basis or connection, but the theory is further peculiar in that it ascribes the origin of the symptoms solely to the repression of the memory of sexual occurrences. All of the symptoms have to do solely with the sexual life of the patient, his sexual misdemeanors, vagaries, peccadillos and the like. That practical men, such as internists and surgeons, should have come to regard this theory with the contempt that it deserves and should have gone to the extreme of disregarding neurologic interpretations of symptoms altogether, is perhaps not surprising. It is an unfortunate situation, but one which even those neurologists who reject so-called psychanalysis are in part responsible for, since they have not sufficiently combatted the doctrines of the latter. It is a never ending duty to point out that these doctrines are intrinsically illogical, and that they ignore the simplest facts of physiology, of metabolism and of pathology; and further that they are as misleading and harmful as they are filthy and vile. The modern world is not quite sane, and that new sects should arise in medicine presenting this or that mystic cult, no matter how absurd, is only in keeping with the times.

Let us, however, make amends to the internist and the surgeon by meeting them on a common ground; that is, the common ground of rational and scientific medicine. To begin, it is an established fact that nervous diseases, both functional and organic, are very commonly attended by visceral symptoms; secondly, because of this fact there is frequently great danger of error in diagnosis and consequently of treatment. Sometimes it is a diagnosis of functional disease of the heart or of the stomach or perhaps of actual organic disease of this or that organ; for example, of the gall-bladder or of the kidney. Not infrequently, especially when the symptoms are referred to the abdomen, they lead to grave, unnecessary and wholly gratuitous operations.

The subject of the visceral symptomatology of nervous diseases is a very extensive one, and, in the short time at our disposal, it is impossible to consider it adequately. Enough, however, can be said to indicate the general principles and in some instances the specific facts that must guide us if error is to be avoided.

### FUNCTIONAL NERVOUS DISEASES

Let us turn our attention first to the functional nervous affections. The neuroses, as I have elsewhere pointed out, separate themselves rationally into, first, neurasthenia, the neurosis of chronic or persistent fatigue; second, psychasthenia, an affection made up of a preexisting neuropathy plus nervous exhaustion; third, hysteria, the disease of suggestion; and last, hypochondria, an affection in which, while neither organic nor functional disturbances have real existence, the patient notwithstanding suffers from a fixed conviction of illness.

Let us begin with the subject of neurasthenia. Here at once we open up a disputed territory. Physicians are not wanting who deny to neurasthenia a separate clinical entity, who maintain that in so-called neurasthenia there is always some—often obscure and often undiscovered—organic disease, and that to say that a patient suffers from neurasthenia is equivalent to an imperfect or incomplete diagnosis. This view has its origin first in the neglect so common among physicians and even among neurologists to make a serious study of neurasthenia, deeming the subject both uninteresting and unimportant; and, secondly, because of the failure to make the distinction between neurosis, neurasthenia, and the general weakness which is sooner or later the accompaniment of visceral disease. This weakness differs radically in its symptomatology from that of neurasthenia, as I myself long ago pointed out; and in speaking of it I have used the general term neurasthenia symptomatica.

Confusion is still further added to the subject by the failure of certain neurologists—more especially those of the freudian school—to differentiate between the various neuroses, neurasthenia, hysteria and psychasthenia. If all nervous phenomena are due to repressed sexual complexes, it follows logically that a differentiation of the neuroses is both impossible and unnecessary.

I have endeavored in my own writings to give clearness to this subject by defining neurasthenia as the fatigue neurosis. If we limit the application of the term neurasthenia to the symptoms arising in persistent or chronic fatigue, the clinical picture at once assumes definiteness and clearness. The cardinal symptom is that of a ready exhaustion. There is a failure of the sustained expenditure of energy. This becomes evident whether the expenditure of energy is muscular or mental. In the demands of modern civilization, an undue expenditure of energy resulting in over-fatigue is of frequent occurrence. Under such circumstances, if the overexpenditure of energy be long continued, a condition results in which the normal amount of rest and food no longer suffices to restore the organism to the normal equilibrium. Gradually a well defined symptom-group becomes established. Thus, in addition to the fact that the patient becomes readily exhausted, we note an undue irritability, an exaggerated response to stimuli from without. In other words, along with the lessened power of the sustained expenditure of energy, there is also a lessened inhibition.

The symptoms of neurasthenia consist of motor, sensory, psychic and somatic phenomena. Time will not permit us to consider the motor phenomena other than to point out that the exhaustion is evidenced by ready fatigue; the irritability, by increased reflexes and associated changes. The sensory symptoms consist largely of fatigue sensations, aches and pains; ready exhaustion and irritability are revealed typically by special sense organs such as the eye. The psychic phenomena again reveal the symptoms of ready exhaustion, an incapacity for sustained mental effort, a diminution in the concentration of attention and a lessening in the spontaneity of thought; and of these phenomena, emotional irritability, diminished self-

control and a lessened inhibition are the natural accompaniments.

However, in the present discussion, it is the somatic phenomena of neurasthenia that mainly concern us. Here we meet with symptoms everywhere indicating a deficient innervation and a deficient inhibition. Let us turn our attention first to the circulatory apparatus. Here we meet with lividity and coldness of the extremities, lessening of the force and modifications of the rhythm of the heart and changes in the character and frequency of the pulse. Deficiency of innervation is shown by the general reduction of vascular tone; diminished inhibition, by the increased pulse rate and by attacks of tachycardia brought on by exertion or by other disturbing causes. Pallor, flushings and other vasomotor disturbances are also noted. Not infrequently attacks of tachycardia are associated with disturbances of digestion, though not dependent on the latter; in such case, they commonly occur when digestion has been delayed or arrested and when marked gaseous distention of the stomach has taken place.

Occasionally the attacks of tachycardia are very severe, are accompanied by pain and may resemble attacks of angina pectoris. Such an attack may be preceded by a sense of distress about the heart, of fulness and oppression, which may become so severe as to spread over the left half of the chest or body, and may even be accompanied by sensations of choking and difficulty in swallowing. Suddenly the patient feels an intense griping in the precordial region. This pain may, as in true angina, radiate to the axilla and down the arm. Nausea and great fright are also present. The face is pale, the pulse rapid, small and feeble. In a few minutes, three to six, the face becomes flushed, the pulse gains in force, though it is still very rapid—from 130 to 140—and it may be slightly intermittent. Soon the pulse rate falls; the oppression diminishes; the manifestations of fright, though still present, grow less.

When we turn our attention to the digestive tract, the first symptom that we meet with is again that of weakness. The patient having taken food feels at first no distress, but after the lapse of an interval of time, sensations of weight, of oppression, of distention and of general discomfort about the epigastrium make their appearance. Usually eructations of gas occur, and it is noted that this gas is tasteless. These symptoms are those of a delayed, a somewhat enfeebled digestion, and they are usually accompanied in a degree by constipation. They are those of a mild atonic indigestion, of a somewhat diminished gastro-intestinal innervation.

Not infrequently the symptoms are more pronounced. In addition to the mere sense of weight and oppression, pain may make its appearance. This pain is referred to the epigastrium and at times to the back between the shoulder blades. If we examine the epigastrium, we find that it is somewhat sensitive to pressure; it is not, however, acutely painful as in inflammation, ulcer or other organic trouble. Distention is also noted, but this never suggests a dilatation. If a gastric analysis be now made, no changes of moment may be noted. More frequently, however, there is a diminution—which may be very marked—in the amount of hydrochloric acid. Digestion is much delayed and often the stomach is not emptied before it is time to take the next meal. Nausea is infrequent, vomiting quite rare. It is still an atonic indigestion. Quite usually the defective innervation involves the intestine; abdominal distention, meteorism and constipation are naturally present.

A little later the digestive disturbances may become still more pronounced. Sensations of distress, weight and tenderness may increase; fermentation with the formation of butyric, lactic and perhaps other acids may make its appearance; acid eructations, a coated tongue and other evidences of a gastric catarrh characterize the picture. The associated intestinal phenomena of constipation, meteorism, abdominal distress or pains are also pronounced.

When we turn our attention to the various secretory disturbances, the picture is again that of a deficient innervation; as witness, the dampness of the hands and feet and the ready sweating on exertion. The sexual disturbances, too, are those of weakness and irritability, and important as they are cannot detain us here.

The point of importance for us to bear in mind from the foregoing considerations is not to give to the local symptoms a value which they do not possess, nor to forget the general condition with which they are associated. The diagnosis of an angina pectoris when the symptoms are merely those of a severe neurasthenic cardiac attack, a pseudo-angina, is most unfortunate. Similarly is it with a diagnosis of functional or organic disease of the stomach when the symptoms of the latter are but part and parcel of the larger symptom-group of neurasthenia.

A still more interesting and important picture presents itself when we turn our attention to hysteria. I need not dwell on the origin of the name hysteria; that it is derived from the Greek word for uterus, hystera, that the early Greeks believed that the symptoms were due to the uterus wandering about the body seeking sexual satisfaction, and that the belief in the sexual origin of hysteria in some form or other has persisted to our own day; as witness, the theory of the repressed memories of sexual traumas in childhood advocated by the freudian sect. I need not trace the evolution of our knowledge of hysteria through the writings of Lepois, Sydenham, Briquet and Charcot. We are all familiar with the elaborate clinical descriptions and the elaborate chartings of the symptoms, the result of the labors of Charcot, of Paul Richer and of Gilles de la Tourette. For a time it was believed that the symptomatology of hysteria had been definitely established. Much, however, remained to be discovered. Charcot had recognized the similarity of the symptoms observed in hysteria to the symptoms observed in hypnosis, but it remained for Moebius to point out definitely that all of the symptoms were of mental origin. The next step was the recognition of the fact that the symptoms owe their origin to suggestion; this had been long suspected and was finally and definitely demonstrated by Babinski. The latter showed, for instance, that hemianesthesia is never present, provided that the examination is so conducted as to avoid all possibility of suggestion, and provided also that the patient has not already been previously examined. What is true of anesthesia is equally true of the other symptoms. They are all the result of suggestion in some form or other.

A most important fact, and one that has a bearing on the essential neuropathy of hysteria, must here be pointed out. If a normal person be tested for anesthesia and the physician while making the test actively

employ suggestion, both direct and indirect, he fails to develop the symptom. In this fact lies the cardinal truth as to the nature of hysteria. Hysteria is a neuropathy characterized by a pathologic susceptibility to suggestion. The person suffers from a feebleness of resistance to suggestion and to impressions generally. These suggestions usually arise from without; they may, however, have their origin in impressions received from his own organism. It follows almost as a corollary that the neuropathy of hysteria is innate, is part and parcel of the make-up of the individual at his birth. Charcot and his pupils looked on hysteria as always inherited. All other causes are merely incidental to the development of the surface symptoms.

The incident which has acted as a suggestion for the development of a given symptom is sometimes quite apparent. Notably is this the case in the hysteria following accidents. Quite frequently again, on the other hand, the incident is obscure or difficult to trace. This is not infrequently the case in the symptoms referred to the viscera. It must, however, be unhesitatingly conceded that the visceral symptoms equally have their origin in suggestion, no matter how arising.

Among the visceral symptoms of hysteria are disturbances of the digestive tract, of the cardiovascular apparatus, of the respiratory tract and other symptoms which may more or less closely simulate organic disease. Among the disturbances of the digestive tract, we note especially loss of appetite, rejection and disgust of food and vomiting. It is noteworthy that in spite of the apparent seriousness of the symptoms, the patient reveals little change or impairment of her nutrition. It is only when fraudulent or secret access to food is made impossible that loss of weight and even emaciation may be noted. Pain may be complained of and the vomited matter may contain blood, and the picture of an actual lesion, for example, a gastric ulcer may be simulated. We should bear in mind that the mucous membrane of the stomach may bleed just as may the mucous membrane of the nose, that is, without gross lesion, the bleeding being in all probability from the capillaries. That such bleeding should occasionally result from the retching to which the patients subject themselves is not surprising. Very frequently the bleeding is traced to the gums and has been voluntarily induced by the patient. Among the circulatory disturbances of hysteria are disturbances of the rhythm of the heart, local flushing, pallor or other vasomotor phenomena. Among the respiratory phenomena are sneezing, cough, curious and apparently automatic cries and sounds, aphonia and other often associated symptoms, such as mutism and spurious aphasia. Among the disturbances of secretion are polyuria and spurious anuria. Added to these are various abnormalities of the genital functions. Though the latter are significant, time forbids their consideration.

Far more important are the various local pains of hysteria which time and again more or less closely simulate organic disease. I refer to the so-called painful stigmata. They are, as is well known, among the most frequent of all the phenomena of hysteria. In spite of the fact that their nature and significance has long been recognized, they still lead with great frequency to surgical interference. So much so is this the fact that I can truthfully say that I rarely have a case of hysteria admitted to my wards in which on exposing the abdomen, I do not find the latter revealing the scars of one and often of many and repeated operations. Hysterical painful areas are very commonly found above the groins, over the iliac fossa and over various portions of the abdomen. It is a constantly recurring experience in my service to find the scars of operations for appendicitis, for all kinds of pelvic conditions, the scars of drainage of the gall-bladder, of operations for visceral ptosis, and especially of operations purely exploratory in their character. Repeatedly it has been my experience to receive patients on whom a first operation for appendicitis had been performed with perhaps removal of the right ovary, then a second operation for removal of the left ovary, then a hysterectomy and finally other procedures such as removal of the coccyx; or, it may be, nephropexy or perhaps some operation on the gall-bladder.

The pains of hysteria are distinguished from the pains of visceral disease by the fact that they are purely superficial; as a rule, the painful area can be included in the fold of skin taken between the thumb and forefinger of the examiner; and they commonly disappear under deep pressure, especially when this is made gradually. Besides, in a given case, the tender area is not confined to one spot, for example, over an ovary, but is also found over other portions of the abdomen and trunk, over the spine, over the scapulae, over the coccyx and elsewhere. In addition other crass evidences of hysteria are usually present, referable it may be to the special sense organs or other structures, or more particularly revealed by the mental condition of the patient. It is, indeed, the latter that is responsible for the special symptoms presented. Hysterical patients like to occupy the center of the stage; they like to be objects of interest and sympathy, and this fact coupled with their vulnerability to suggestion, a vulnerability which expresses itself at times in a veritable desire to present the symptoms sought for, may lead both physician and surgeon astray.

Obviously the investigation of a given case should be such as at first and definitely to exclude hysteria. If hysteria be suspected, it becomes evident at once that the investigation of the symptoms must be made with special care, suggestion being absolutely avoided, or in a doubtful case the examination being made with the negative suggestion. If organic disease be really present, as, for example, in the case of a true appendicitis, the negative suggestion will not dispel the symptoms.

When we turn our attention to psychasthenia — a neurosis which is made up of two factors, namely, a preexisting neuropathy plus a superimposed nervous exhaustion — the picture presented may be very complicated. On the whole, however, symptoms referable to the viscera of such severity as to dominate the clinical picture are distinctly the exception. When present, they are of the same general character as those observed in neurasthenia and need not especially detain us. If we turn our attention to hypochondria — the neurosis characterized by a fixed conviction of illness when such illness has no existence — the complaints of the patients may again lead to the erroneous diagnosis of visceral disease. Quite commonly, it is the stomach, liver, or intestinal tract on which the attention of the patient is centered; at other times, the genital apparatus or the pelvic organs, are the objects of the nosophobia. That such patients frequently become the willing subjects of an unnecessary and a misdirected treatment need hardly be pointed out.

ORGANIC NERVOUS DISEASES

When we turn our attention to organic nervous diseases, a still more remarkable picture unfolds itself. Here in recognized cases pain, vomiting and other symptoms referred to the viscera lead time and again to exploratory operations. It is a not infrequent experience in my clinic to meet with cases of paresis and of tabes in which such operations have been performed, the patients having merely suffered from visceral crises, the result of sensory root involvement. I have known a paretic patient to have been the subject of as many as four laparotomies. Time and again, I have known tabetics to have been subjected to similar procedures. In one notable instance, a kidney was exposed and explored — fruitlessly, of course. In another instance, that of an unrecognized brain tumor, vomiting led to an exploratory operation on the upper abdomen. In another instance of unrecognized brain tumor, the diagnosis of cyclic vomiting was made. Time and again, also, the pains of tumor of the cord have led to mistaken diagnoses and not infrequently to unnecessary abdominal operations. To this fact Elsberg has also called attention. Time will not permit of an extended discussion of this subject. The general truth, however, becomes evident that every case, especially of obscure pain or obscure visceral symptomatology, should be submitted to a careful neurologic examination. It is certainly unpardonable to open up an abdomen or to explore a kidney when a neurologic examination would have revealed the existence of a tabes. It is equally regrettable when unnecessary and positively harmful operations are performed in the functional neuroses. As regards the latter, we should bear in mind that in the neuropathies as a group there is a generally lessened cerebral domination or inhibition, a relative degree of psychic adynamia, as I have elsewhere expressed it. As a consequence, the lower centers, the lower neural mechanisms, react unduly, and, as a consequence, neural visceral reactions become unduly prominent. Normal responses are grossly exaggerated, or anomalies, irregularities or vagaries are presented.

The detailed explanation of the symptoms is to be sought for in the intimate relations existing between the cerebrospinal, the autonomic and the sympathetic nervous systems. A discussion of this aspect of the subject, no matter how interesting, would transgress too far the limits of this paper. Let it suffice to recall the duplex innervation of the heart; first, the autonomic innervation through the vagus and, second, the sympathetic innervation through the accelerator nerves; the first representing a higher mechanism of domination and control; the second, a lower mechanism which manifests increased or unrestrained activity when the higher mechanism is weakened. In the case of the gastro-intestinal tract, we have, again, on the one hand, the vagus, and on the other, the splanchnic nerves, and between these a similar interaction takes place. When we reflect that duplex innervations exist for the glands of the mucous membranes of the trachea and bronchi, for the muscles of the trachea and bronchi, for the glands and muscles of the intestinal tract from the esophagus to the anus, for the urinary bladder, for the genital organs and for other viscera, and for the blood vessels of all these structures as well, we can readily understand that in the derangements of action which result from overfatigue or which result from the lessened cerebral domination present in the neuroses as a whole, very many symptoms make their appearance; symptoms which, as I have endeavored to show, may be grossly misleading, if not properly interpreted. The first step, I should say in conclusion, is always the prompt recognition of the underlying neurosis or of the underlying organic nervous disease as the case may be.

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ABSTRACT OF DISCUSSION

Dr. Theodore Diller, Pittsburgh: Twenty years ago I made many diagnoses of neurasthenia. Proportionate to the number of cases seen, I now make not more than half, possibly only one third as many such diagnoses. The cases which I would have termed neurasthenia twenty to twenty-five years ago are now very largely termed psychasthenia. Even in the older days we heard much about the mental symptoms of neurasthenia. Another diagnosis which I made twenty-five years ago and do not make now is myasthenia. I see many people who lack the vital spark, they are generally weak. I see people that I classified as having a fixed idea and whom probably we now classify under the hysteric group. And these are, I believe, the particular ones Dr. Dercum has in mind—persons who have their idea on a certain pain, a certain part of the body to which their mind reverts and on which their attention is fixed. I recall a man who had undergone seven or eight operations—an exploratory operation first for one kidney and then for the other; an operation for appendicitis on the right side and then one on the left side in the belief that the appendix was misplaced; an operation for gallstones, etc. The man was 28 or 29 years old, and after going over him carefully I felt sure that the trouble was merely a fixed idea; that the thing was entirely psychic. I proposed observation and rest treatment, which the patient refused. He was bent on having another operation.

Dr. Walter Timme, New York: Fortunately, in New York, surgeons are recognizing the neurologic aspects of these vague abdominal pains, and refer such patients to neurologists. A few years ago one of the assistant attending surgeons at a hospital in New York City became at the same time a consulting physician of a neurologic institute where he was to examine cases and differentiate the neurologic symptoms before operation. Since that time many cases have been referred for neurologic examination before operation, with good result. The first case of that type sent to us was a girl, 20 to 22 years of age, who had been complaining of abdominal pain and weakness, and who for months had been vomiting after each meal. They removed the appendix, but the vomiting and the pain continued. Then, because the pain was greatly enhanced at the time of menstruation, they took out both ovaries, but the pain continued. They performed a third operation for adhesions that had formed following the former operation, but she still vomited and had pain; they removed the uterus, and operated for gallstones, but the vomiting continued and the weakness persisted. Then the doctor wrote a letter saying: "This young girl has had all removable organs in the abdomen removed and has nothing left. Won't you kindly do something for her?" Vagotomy was done, and she improved. Within three weeks she was cured, and has never had a recurrence. That happened two years ago.

These cases of pain and abdominal distress are not cases of hysteria and neurasthenia. The pain exists. It is not an imaginary condition. It is produced largely by the nonfunctioning of the smooth muscle fibers of the intestinal and stomach walls. The tension of those organs is increased or reduced by an irritable vagus, and when this is corrected the patient is cured.

Dr. William A. Jones, Minneapolis: I am in sympathy with Dr. Dercum's paper and agree with his view as to the somatic phenomena of psychasthenia. Some years ago Dr. W. J. Mayo referred a patient with dilated stomach to me. She was told that if she was not better in a month she could have her stomach repaired. She remained in the hospital

about four weeks, and after seeing her vomit for ten days and unable to retain food, I gave her 10 grains of calomel. I do not know why, but it brought out what was there. She had an acute exacerbation of chronic nephritis. Her vomiting ceased, and she has not vomited in four years.

DR. JOSEPH BYRNE, New York: I was rather surprised that Dr. Dercum did not make any allusion to the psychologic factor, except the rôle of suggestion, as pointed out by Babinski. We have to see these things from the patient's viewpoint. I strongly object to the term "imaginative" as applied to disorders when the patient presents herself. Anything present to the patient's mind is very real. That is a sharp distinction that must be made. When a patient complains and suffers we must not tell her she has an imaginative disturbance. She will be insulted and go away and rate us accordingly. We have to take into consideration the psychic and somatic factors in every particular. The nervous system is made up of neurons and these neurons may be exhausted, this being the underlying condition which brings about somatic and psychic disturbances. This is the a-b-c of psychology. Pain and fear have sent patients to doctors since the days of Adam and there is nothing less understood by the physician than these two things—pain and fear. The patient comes to us complaining of pain and if keen in history taking we make our notes and getting him off his guard let him talk freely when we will find that what he suffers from is not the same thing that we mean by pain at all. Then we get our estimate of what is really the underlying condition. In essaying the value of pain as a symptom, we must get at the somatic as well as the psychic value, and we may state it in percentages, as 80 per cent. of psychic and 20 per cent. of somatic origin, and so on. But, if we are on our guard and try to reach what is fundamental in the case, then we are on the way to proper diagnosis and treatment. I can only corroborate the statement as to the futile operations and needless sufferings many of these patients are subjected to by surgeons. These patients should more frequently be referred to the neurologist.

DR. C. R. BALL, St. Paul: I think surgeons have a wholesome fear of these vague, indefinite visceral pains, and for years my experience has been that surgeons and internists are much more apt to make diagnoses of hysteria and neurosis than are the neurologists and psychologists. It is in the organic conditions that the surgeons are still making mistakes. It is in such conditions as cord lesions, either from syphilis or other sources, that they are apt to think there may be a stone in the kidney, or stones in the gallbladder or common duct. It is surprising how often they operate for pain and never find out that they have made a mistake, because, I think, in many patients operated on for gallstones the surgeon will find gallstones, and, of course, when the surgeon finds gallstones, he removes them, puts them in a bottle and shows them to the patient afterward. In the last two years I have had a number of patients who have had lightning pains after having been operated on for gallstones and the stones found, and neither the surgeon nor the patient ever thought that the gastric crisis was causing the painful attacks. Some time ago a young nurse was referred to me by a surgeon. She had had four abdominal operations. The surgeon operated on the gallbladder and found stones; he had done a gastro-enterostomy; he had done some work on the ovaries and on the uterus, and still his patient was getting worse. It was a very intense case of psychasthenia, almost a border-line mentally. Her mind was concentrated on herself. Because of this morbid self-analysis, I found it very difficult to accomplish anything with her. I felt that the only thing to do was to give her a new impulse and bring about a different mental attitude. Therefore, I put her on a case, a rather difficult mental case, and under that environment this nurse braced up, finished her case successfully, took other cases, and since then has been fairly well, at least able to follow her profession.

DR. ALBERT E. STERNE, Indianapolis: We have all had experiences like those of Dr. Dercum. What has impressed me most has been this: First, that the quality most lacking, not only in the medical profession but in our patients, as a rule, is just good plain common sense; second, that in the medical profession there are men (who by courtesy are called neurologists but should be classed as internists), who really take case histories, who really inquire of the patient the reasons and the various factors which bring the patient to the doctor. Not only once, but many times, I have had patients who have gone the rounds of physicians, who have gone from one surgeon to another and had this, that and the other operation done. And they say, "Doctor, I have never had an examination before." That is a common experience. What does the surgeon do, what does the general practitioner do, when he sees these patients first? They all see them before we do. We are the last resort. We have to undo largely what has been done before. They ask a few questions relative to the thing the patient complains of, they let that down, place the patient on the table—"Yes, you have a fibroid; you have a cystic ovary; you have prolapse of the stomach, intestinal stasis"—and what not, but seldom conduct a far-reaching general examination. They rarely get at the fundamental attitude which the patient presents. The first thing of importance, it seems to me, is to get the subjective point of view of the patient. Let the patient talk himself or herself out at the first sitting; then make your examination and get your own objective point of view. With your objective conclusions superposed on the patient's subjective point of view, you acquire your own subjective analysis of that particular patient. Very rarely, if the physician is an able man, who takes careful case histories and makes thorough physical examinations, will he stray far from the actual condition that any individual presents.

DR. OTTO G. FREYERMUTH, San Francisco: In the analysis of a case we should take into consideration as a prime factor the psychoneuronic structure of that patient, and then we will have something definite on whch to work. I am heartly in sympathy with what Dr. Byrne says, that when a patient says he has pain, he has pain. There is no such thing as imaginative pain. There is a stimulation some place in the tract from the periphery to the cerebral cortex, and we must locate that irritation. As to hysteria, I must admit that when I make a diagnosis of hysteria I confess by that diagnosis that I do not know what is the matter with my patient.

DR. B. LEMCHEN, Dunning, Ill.: I am especially pleased that Dr. Dercum recognizes "nerve fatigue." Certain investigators have been trying to make us believe that there is no such thing as "nerve fatigue." The mistake they have made all this time has been that they do not recognize the fact that they were trying to stimulate a nerve to which they have applied electricity, they added force. The nerve cells themselves must add this force by doing work, and when the nerve cells work they must become fatigued, as do any other cells. The nerve cells do become fatigued when overstimulated, and in reality pain is only the cry of the nerve for help, including rest. We can go even farther and say that hysteria is also due to nerve fatigue. It requires more force to work with peripheral stimulation than with psychic intrastimulation, because with peripheral stimulation the stimulus has to travel more neurons and, of course, requires more work.

DR. FRANCIS X. DERCUM, Philadelphia: The terms hysteria and neurasthenia are used simply for the purpose of defining these groups. We should recognize that we have visceral symptoms, pronounced or indefinite. These special localized symptoms may bear relation to the nervous symptom groups which we characterize as functional nervous disorders. I have seen duplicated beyond belief the mutilation of patients. In one case, after a series of fruitless operations, all the coccyx was removed and finally a portion of the sacrum was removed. Such a procedure is not only ludicrous, it is criminal in a sense; it is wicked beyond words. The importance of neurasthenia is not recognized, and there is no adjective that will fit these surgical mistakes. When the kidney is laid open and split, it is a more dangerous procedure than looking at the pupils and making the appropriate tests for tabes. Neurology today is playing the most important rôle in medicine. The neurologist is doing more in the war than the internist and the surgeon combined. The importance of neurology cannot be overestimated.

# NASMYTH'S MEMBRANE, EPITHELIAL DÉBRIS, AND THE GRANULAR LAYER OF TOMES*

EUGENE S. TALBOT, M.D., D.D.S.
CHICAGO

For more than a hundred years scientists have speculated on the etiology and function of Nasmyth's membrane. Within the last twenty-five years, epithelial cells in the peridental membrane have caused considerable discussion in our modern textbooks, while the granular layer of Tomes has not received the attention that its pathologic conditions demand.

On account of the interest lately manifested in focal infections and the imperfect operations on devitalized teeth, I have spent a number of years doing research work on teeth of animals and human beings. The amount of material at my disposal has been unlimited. The Cook County morgue has furnished me with human material, while the kennels and laboratories at Rush Medical College have provided more than the required number of dogs. Instead, therefore, of basing my conclusions on one tube or one slide, hundreds of sections were cut and mounted for microscopic study.

While this work was going on, questions regarding histology frequently arose and required investigation. For this purpose human embryos and very young children were required. This material was more difficult to obtain. "Where there is a will there is a way," and so the machinery was put in motion and abundant material was obtained. The result of all this work will be published in book form. A part of this work, however, is so unique, important and original that I feel it should be given to the profession at the earliest opportunity. Hence, my reason for appearing before you at this time.

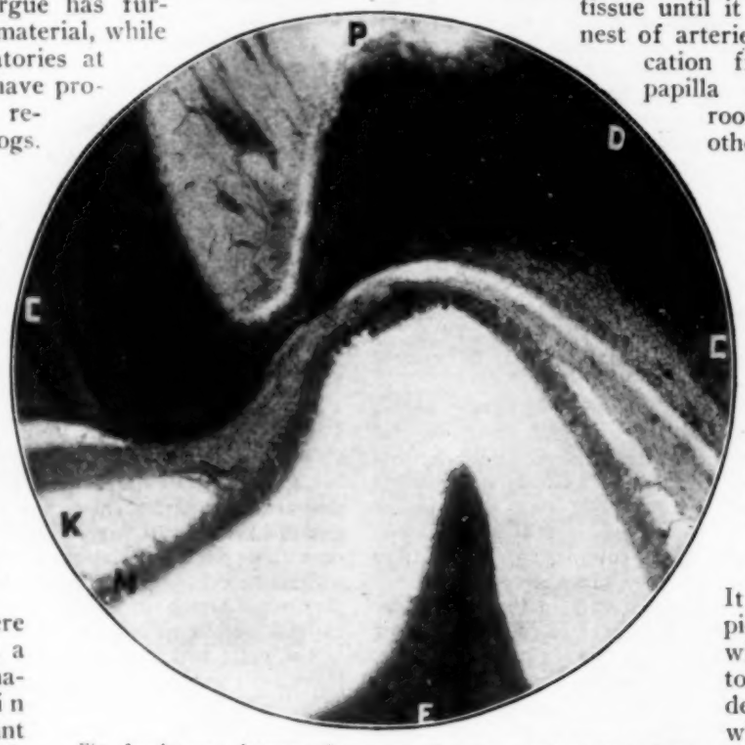


Fig. 3.—An area between the crown of a permanent tooth and the root of a temporary tooth of a dog: *C*, cementum; *D*, dentin; *E*, enamel of the permanent tooth; *K*, fibrous sac; *M*, external epithelium; × 40.

While Nasmyth's membrane, epithelial débris and the granular layer of Tomes have much to do with the pathology of the teeth and the alveolar process, our textbooks seem unable to cope with the etiology or pathology of the apical dental tissues. In my researches on these tissues in both animal and human subjects, I accidentally hit on the source of these pathologic conditions, and now present them through this society to the profession.

Figure 1 shows the development of the crown of a human cuspid tooth at birth. The different tissues are readily seen. The dental papilla has taken its place and the outline of the tooth to be formed. The enamel organ is forming itself about the papilla. It seems, however, to have pulled away from its normal position on both sides at the neck in the preparation of the material for the microscope. The two dark lines representing the inner and outer layer of epithelial cells are nicely outlined, and between these two layers may be seen the stellate reticulum. Note that the epithelial cord is being absorbed away regardless of the fact that the fibrous sac has not come in contact with it. It would seem, therefore, and this picture actually demonstrates, that it is not the fibrous tissue of the dental sac that causes absorption of the epithelial cord, as we have always been taught to believe.

At the base of the papilla where the fibrous sac will eventually develop may be seen a nidus of arteries which furnish blood for the nourishment of the dental tissue until it is fully formed. This nest of arteries always marks the location from which the dental papilla forms, including the root of the tooth. In other words, the nidus of arteries is always the base, no matter how long the tooth and the root may be.

Details are lost to a great extent in this picture for the purpose of obtaining a large area of structures to show their relationship one to the other. This picture, then, is the characteristic picture of the development of a tooth as shown in our various textbooks. It will be seen that this picture has simply to do with the crown of the tooth and not with the development of the root, which is so necessary in the study of diseases associated with it. It is, therefore, from this period to the full development of the root of the tooth that my researches and this paper have to deal.

Figure 2 is also of a low magnification for the purpose of showing all the tissues in relation to one another. It is claimed by most writers that the external epithelium of the enamel organ is atrophied before the time of the completion of the enamel. Thus Magitot[1] states that the external epithelium of the enamel organ is atrophied before the time of the completion of the enamel. Tomes is also of the same opinion. This picture splendidly demonstrates that this theory is not correct. The enamel is completed in its development. The external epithelial layer is beautifully shown extending from the neck of the tooth entirely around its outer surface. At the lower borders at the neck of the tooth the external epithelial layer of the enamel organ is situated quite a distance

* Read before the Section on Stomatology at the Sixty-Ninth Annual Session of the American Medical Association, Chicago, June, 1918.

* Owing to lack of space this article has been abbreviated for publication in The Journal by the omission of some of the illustrations. The complete article appears in the author's reprints.

1. Magitot: Dental Anatomy, Tomes, pp. 93.

from the enamel, while across the entire crown it is in close contact. The entire tooth is pushing its way toward the surface as the root develops.

To demonstrate further the correctness of this fact, I present Figure 3, showing the temporary premolar

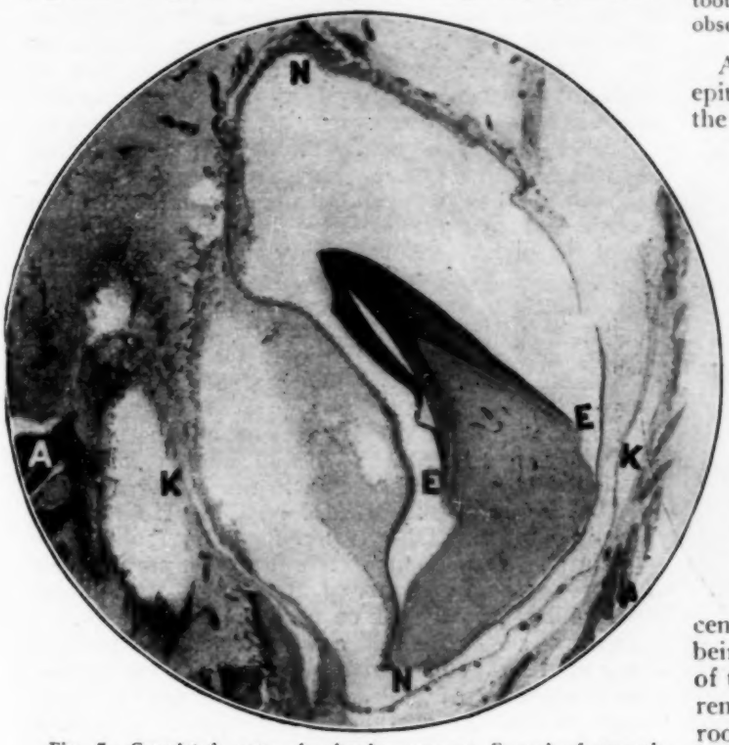


Fig. 7.—Completed root: *A*, alveolar process; *E*, end of enamel; *K*, wall of sac; *N*, external epithelial layer; × 16.

tooth of a dog about 1 year old in position and the permanent tooth erupting, causing absorption of the root of the temporary tooth. The crown of the permanent tooth, including the enamel, is completely formed and is pushing its way by absorption into place. The external epithelial layer of the permanent enamel organ is nicely shown next to, but some distance from, the point of the tooth. Outside the epithelial layer partly attached to, and partly removed from it, may be seen the fibrous sac of the permanent tooth in contact with the absorbed roots and alveolar process of the temporary tooth. The alveolar process, the cementum, the dentin and pulp of the temporary tooth are shown. Osteoclast absorption can also be readily seen. I have hundreds of sections from dogs and human beings to demonstrate that the external epithelial layer remains intact until the eruption of the tooth through the alveolar process.

To show further that the external epithelial layer and the fibrous sac do not always absorb away until the eruption of the tooth, the following case in practice will demonstrate:

A boy, aged 14 years, had erupted all the permanent teeth with the exception of the right inferior second bicuspid. All of the temporary second molars remained in the jaw longer than usual. They were extracted before they became loose in order that the bicuspids might erupt at their proper period. When the temporary right second inferior molar was removed, the bicuspid did not erupt, although there was plenty of room between the first bicuspid and the first permanent molar. A bright red membrane was present over the bicuspid crown after the temporary tooth had been removed. This condition remained for eighteen months. I finally excised this tissue, and the tooth developed into position. When this tissue was placed under the microscope the two layers, one the external epithelial, the other the firbous sac, were distinctly seen. Either there was insufficient energy exerted in the bicuspid tooth to absorb these two membranes, or the fibers of the sac were so dense and strong that the tooth could not push its way into position. All of us have observed similar conditions in our own practice.

As it has been shown conclusively that the external epithelium may and does outlive the development of the enamel until after the eruption of the tooth, we are now prepared to trace its erratic development through its future career. We have seen in former pictures that even after the enamel has begun to form, the external epithelium retains its connection at the neck of the tooth until it has completed its development. As soon as development of the enamel has become completed, the epithelial cells of the internal layer and the material composing the stellate reticulum have exhausted themselves. The external epithelial layer, therefore, has severed its connection with the internal layer at the neck of the tooth, and, the end of the external layer being free, it drops into space or attaches itself to the inner surface of the dental sac, the end of the external epithelial layer resting at the junction of the sac and the root of the tooth.

Figure 4 shows the development of an inferior central incisor at birth. While this specimen was being prepared for the microscope, the posterior part of the alveolar process was destroyed. Enough tissue remains, however, to show the development of the root of the tooth. The nidus of arteries at the base of the papilla is located quite a distance from the

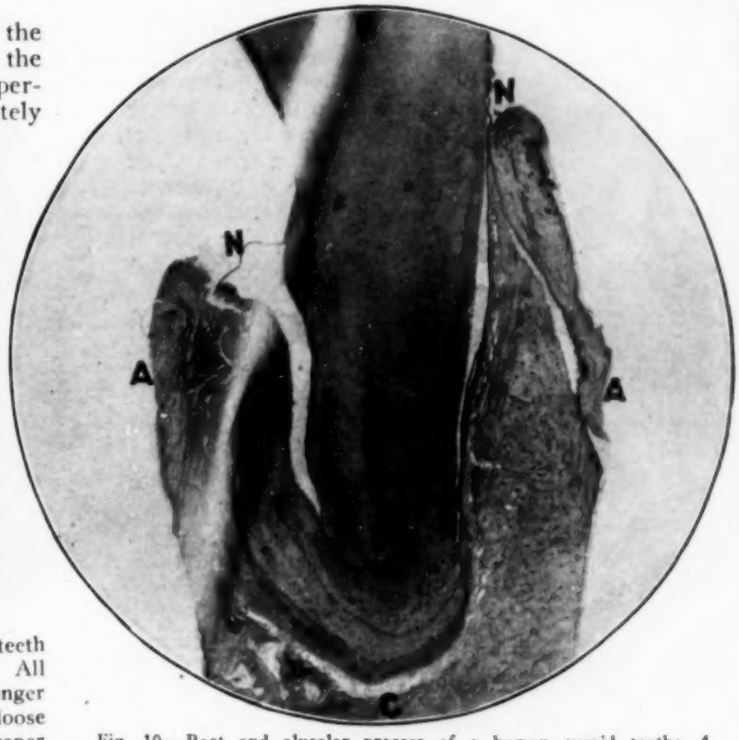


Fig. 10.—Root and alveolar process of a human cuspid tooth: *A*, alveolar process; *C*, cementum; *D*, dentin; *N*, Nasmyth's membrane; × 8.

neck of the tooth, as compared with Figure 1, showing that the root of the tooth has developed nearly one-half its length. The edge of the enamel shows the location of the neck of the tooth. The external

epithelial layer originally extended to that locality before severing its connection with the internal layer. Note that the end of the external layer now rests at the base of the papilla at its junction with the dental sac. Not that the external epithelial layer has grown

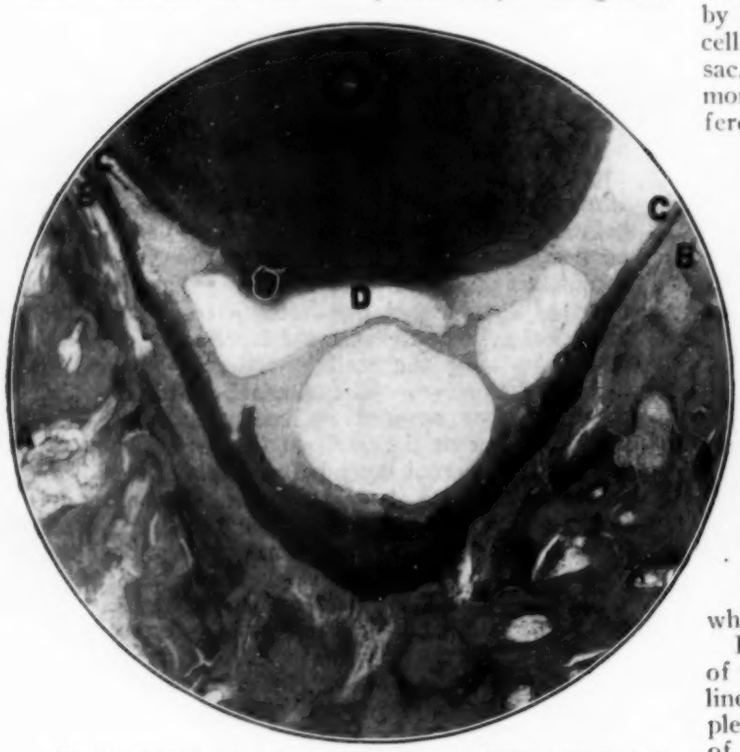


Fig. 11.—End of root and alveolar process of a human bicuspid tooth: *A*, alveolar process; *B*, peridental membrane; *C*, cementum; *D*, dentin; × 23.

in length, which it is capable of doing, but in the development of the root of the tooth, the crown and the root have grown upward from the base where the arteries are located. At places along the external epithelial layer dead cells are given off where it does not receive nourishment from the fibrous sac. Quantities of dead cells have migrated from the external epithelium and are located on the enamel on both sides of the crown. Where the external epithelium has obtained its nourishment from the sac wall, the cells are in a comparatively normal healthy condition.

Figure 5 shows another incisor crown with the enamel normally developed. The internal epithelial layer and the stellate reticulum have entirely disappeared, while the external epithelial layer is still located on the inner surface of the dental sac. The edge of the enamel both anteriorly and posteriorly is distinctly outlined. The external epithelium has dropped down to the junction of the papilla and the fibrous sac, which is also readily seen. The distance, however, between the end of the external epithelium and the edge of the enamel is quite marked. This is the root of the tooth. Here again details are sacrificed to obtain a large area to show the relation of the different tissues to each other. The nest of arteries, however, at the base is readily observed. Like the other pictures, these arteries were originally located at the base of the crown, as seen in Figure 1.

The root of the tooth developing from the base has carried the crown of the tooth toward the surface. Hence the difference in location of the ends of the external epithelium and the edge of the enamel. It is well to call attention at the present time to the dark spot in the fibrous sac outside the external epithelium. Note that bone has not yet developed at that locality. The part of the external epithelium that is nourished by the fibrous sac sends out healthy normal epithelial cells, which migrate in all directions in the fibrous sac. Sometimes they are single, sometimes two or more are together, and they form themselves into different shapes. Sometimes they are in rows and sometimes they form cylinders like a gland. These will be shown more clearly later on. Carry in your mind's eye the end of the external epithelium where it turns on itself at right angles at the right of the picture. This locality will be shown by a higher magnification later.

Figure 6 shows another human tooth developing at birth. The distance between the edge of the enamel and the nest of arteries at the base is readily outlined. The external epithelium at the right has been partially destroyed for want of nourishment, and the dead epithelial cells are scattered in the space. At the left the external epithelial layer extends down to the junction of the fibrous sac and the dental papilla. Here again, epithelial cells shown by the dark spot have migrated outside the external epithelium into the fibrous tissue. New bone is developing at the right which will eventually encroach on the soft tissues.

Figure 7 shows the entire development of the root of the tooth. The neck of the tooth can be easily outlined at the edge of the enamel. The enamel is completely formed, the dentin still developing. The ends of the external epithelial layer, originally located at the end of the enamel at the neck of the tooth, now

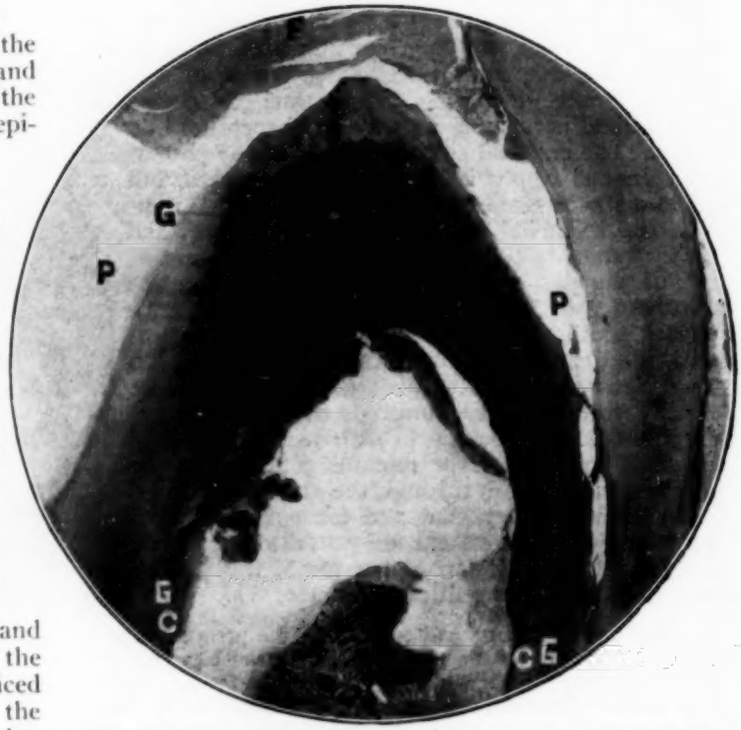


Fig. 12.—Human inferior second molar: *C*, cementum; *D*, dentin; *F*, filling material in pulp chamber; *G*, granular layer of Tomes; *P*, pulp canals; × 13.

are located, as shown in the other illustrations, at the junction of the papilla and the fibrous tissue of the sac. In this case in the laboratory treatment it has been torn away at the end of the root from the fibrous

sac; hence the reason for the two edges not coming together and completing the circle around the dentin. At the upper border outside the external epithelial layer, epithelial cells which I have called "epithelial débris"[2] may be seen migrating into the fibrous tissue.

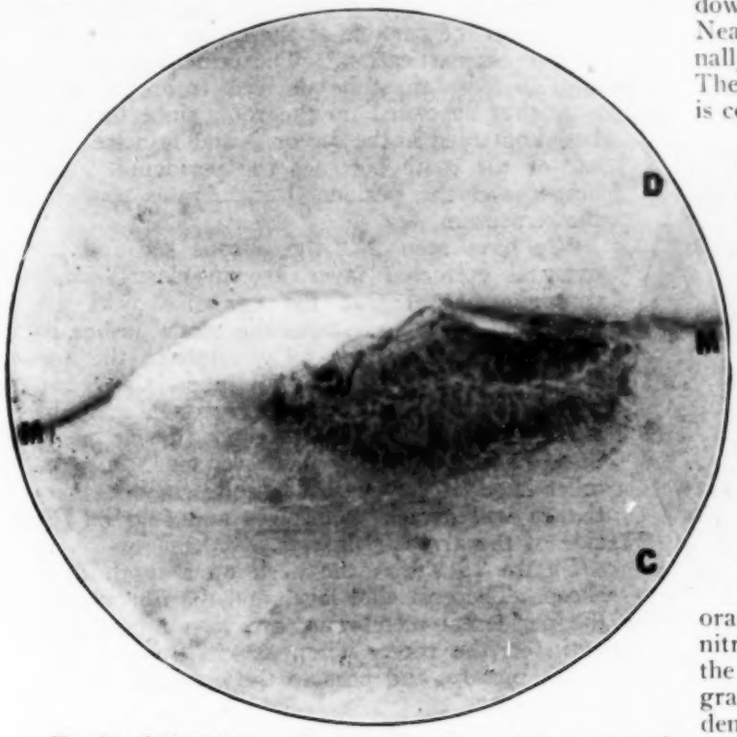


Fig. 14.—Still higher magnification of cavity containing a nest of epithelial cells: *C*, cementum; *B*, dentin; *M*, external epithelial layer in the granular layer of Tomes; × 275.

It will be noticed that the external epithelial layer is located between the dentin papilla and the dental sac, or follicle. As the dental sac adapts itself to the formed dentin, the external epithelial layer is molded to the outer surface of the dentin and the inner surface of the sac.

The sac wall eventually becomes the peridental membrane, which develops the cementum. Naturally, if the external epithelium extends below the neck of the tooth, cement substance is deposited on the epithelial layer and not on the dentin. As we have shown, sometimes the epithelial layer stops at the neck of the tooth, sometimes midway along the root, and frequently it extends entirely around the dentin. Sometimes the epithelial cells are destroyed for want of nourishment. Again, not infrequently the epithelial layer does not adapt itself smoothly to the dentin, and loops are formed; in this manner we obtain the granular layer of Tomes to a smaller or larger degree. The following illustrations show my contention in this regard.

Figure 8 shows the end of the root of a dog's tooth. Between the cementum and the dentin is seen the granular layer of Tomes. Spaces are noticed throughout the entire distance, some small and others quite large. These spaces contain protoplasm and the débris from the external epithelial layer.

Figure 9 is the entire root of a cuspid tooth with the alveolar process of a man, aged 37. This is a very low magnification in order to show all the structures in position. The details, therefore, in a measure are lost. In following the external epithelial layer from the gum margin at the right from the dentin across the space to the alveolar process, it can be traced down one-half the length of the root, at which point it becomes attached to the dentin and passes diagonally downward across the root and to the opposite side. Near this locality may be seen a small opening, originally an artery. This is the granular layer of Tomes. The large mass of material outside the granular layer is cementum.

Figure 10 is a similar reproduction of a very low magnification of a first bicuspid taken from the same mouth. This picture shows the details much more clearly. The external epithelial layer can be traced from one side of the crown down the entire length of the dentin around the end of the root, up the opposite side, and back to the crown. The cement is located outside the epithelial layer and the granular layer of Tomes. We shall see later that this external epithelial layer becomes a part of Nasmyth's membrane.

To appreciate the position of this epithelial layer and its relation to the dentin and cementum, I present Figure 11. This is the root of a cuspid tooth of a man, aged 37. The dentin, the cementum, the peridental membrane and the alveolar process are all plainly shown in this illustration.

In the preparation of these specimens in the laboratory for the microscope, if we employ 5 per cent. nitric acid or 3 per cent. nitric acid for some time, the acid destroys the epithelial layer, including the granular layer of Tomes. In preparing sections the dentin is pulled entirely away from the cementum, which is held firmly to the alveolar process by the fibers of the peridental membrane.

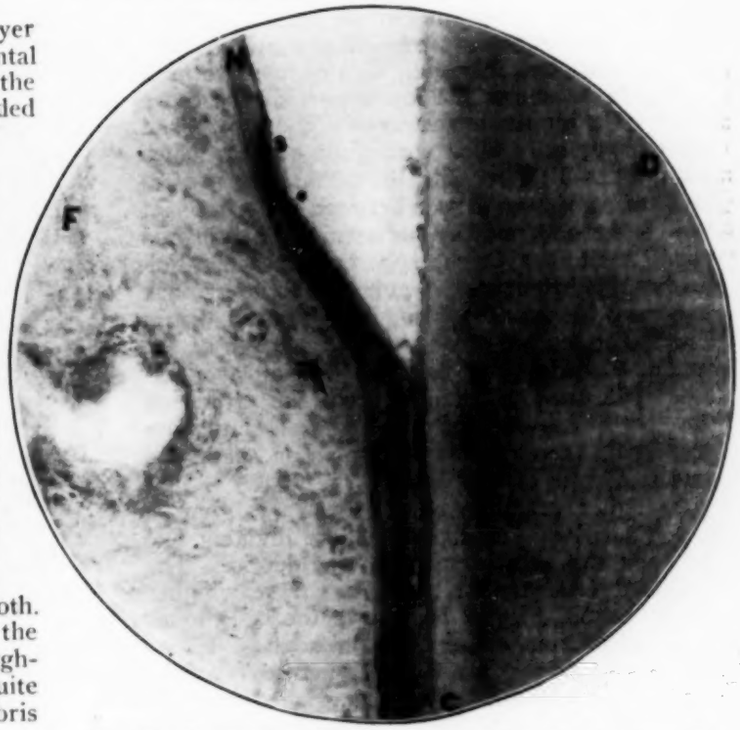


Fig. 15.—Permanent incisor tooth of a sheep; *C*, cementum; *D*, dentin; *F*, fibrous sac; *N*, Nasmyth's membrane; × 230.

The following facts further substantiate the fact that the external epithelial layer often extends partly or entirely around the dentin and inside the cementum. Epithelial cells that have lost their nuclei when granu-

2. Talbot, E. S.: Interstitial Gingivitis or So-Called Alveolaris, 1899.

lation has taken place in the body of the cell — apparently dead cells — stain bluish purple or purple. This purple line is frequently seen extending from the crown on one side of the tooth between the dentin and cementum and around to the crown on the other side.

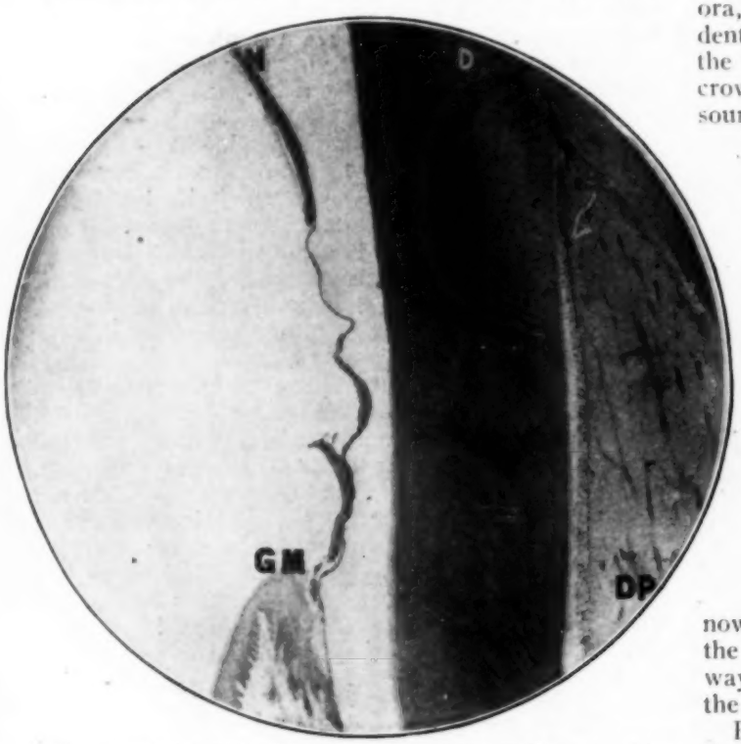


Fig. 16.—Same tooth higher above the gum margin: *D*, dentin; *D P*, dental pulp; *G M*, gum margin; *N*, Nasmyth's membrane; × 24.

For further proof that the external layer can and does extend entirely around the dentin of the roots of the teeth, the following illustrations are presented.

Figure 12 shows the lower part of the crown and roots of a human molar tooth. The crown had been imperfectly filled with gutta-percha, which did not reach the roots of the tooth. Layer after layer of cementum is seen between the roots. At the center and midway between the dentin and the cementum a bright spot is observed. Following this bright spot in either direction, a dark line may be traced moving between the dentin and the cementum down the entire length of the roots. The dark line is the epithelial layer extending around the dentin from the crown of the tooth. A loop of the external epithelium occurred at the bright spot, leaving a space, the granular layer of Tomes.

A higher magnification, Figure 13, gives a better detail of the cavity and the dividing line between the cementum and the dentin. The epithelial cells are well shown. A still higher magnification, Figure 14, shows the cells in a glandular formation. The question now is, How could epithelial cells migrate to the inner surface of dense tooth structure and be well nourished in any other way than that described? The external epithelial layer can be traced throughout the length of the root on either side up to the neck of the tooth.

As I have demonstrated that the external epithelial layer of the enamel organ may and does in many instances extend part way or entirely around the dentin of a molar or single rooted tooth, and that it may survive the entire length of life, we are now prepared to take up the subject of Nasmyth's membrane.

### NASMYTH'S MEMBRANE

In some of the lower animals, especially the herbivora, the cementum alternates with the enamel and dentin to form the surface of the crown of teeth for the purpose of mastication.[3] The cementum for the crown of a tooth must be derived from the same source as that deposited on the root, since they are both contained in the sac or dental follicle. The sac of the tooth becomes the peridental membrane, and the peridental membrane produces the cementum.

We have seen that the fibrous sac and the external epithelial layer are in close contact throughout, and that the epithelial cells are nourished by the sac. As the tooth pushes its way through the bone by absorption, the epithelial layer and the sac wall follow the crown of the tooth. If the enamel is rough and pits are present owing to improper development, these tissues will cling to the enamel. On the other hand, if the enamel is quite smooth, these tissues will detach themselves and fold on the side of the alveolar process.

Figure 15 shows the neck of a tooth of a sheep. The epithelial layer and the fibrous sac, now the peridental membrane, are seen attached to the dentin on the root. They extend upward part way in the picture, and pass to the opposite side of the gingival space.

Figure 16 is taken higher up, showing Nasmyth's membrane on the opposite side of the gingival space and extending up to the point of the tooth, which

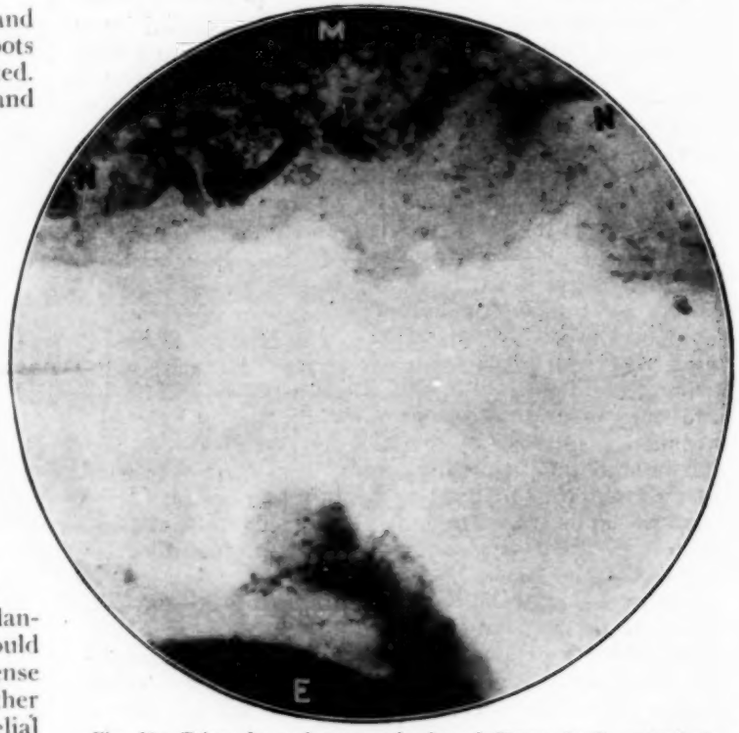


Fig. 18.—Taken from the upper border of Figure 5: *E*, enamel at cutting edge of tooth; *M*, external epithelial layer; *N*, epithelial débris; × 155.

does not show in this illustration. The epithelial cells and the fibrous sac can be readily seen.

3. Owing to the length of this paper, details will be omitted.

Figure 17 shows a higher magnification of the first section of Nasmyth's membrane just above the gingival space. The epithelial cells and the fibrous sac with the line of demarcation are beautifully shown.

The peculiar consistency of Nasmyth's membrane is due to the action of acids on partly calcified epithelial cells in the preparation of the tissues for the microscope.

From an evolutionary point of view, the process of Nasmyth's membrane development in the human being is atavistic and is a survival from lower vertebrates.

Nasmyth's membrane may also be found in the pulp chamber. If we prepare the partly calcified odontoblastic layer for the microscope in like manner we obtain like results.

### EPITHELIAL DÉBRIS [4]

Under a low magnifying power I have already demonstrated epithelial cells in the fibrous sac. These cells migrate into the fibrous tissue of the sac after the enamel has become fully formed and the external epithelial layer has separated itself and become attached to the inner surface of the sac wall Frequently part or all of the external epithelium does not come in contact, and the cells die. Cells that are nourished migrate in single cells or in any number from two to fifty or more. They arrange themselves in strings, in doubles, in loops and glandular forms. Naturally a large number are found near and just below the neck of the tooth for the reason that the external epithelial layer is always found at that locality, while it does not always extend part or all the way around the dentin of the root. The following illustrations are taken at birth while the dental follicle is still intact and the tooth is just beginning to push its way to the surface. These pictures are all of a higher magnification, ranging from 150 to 300 diameters.

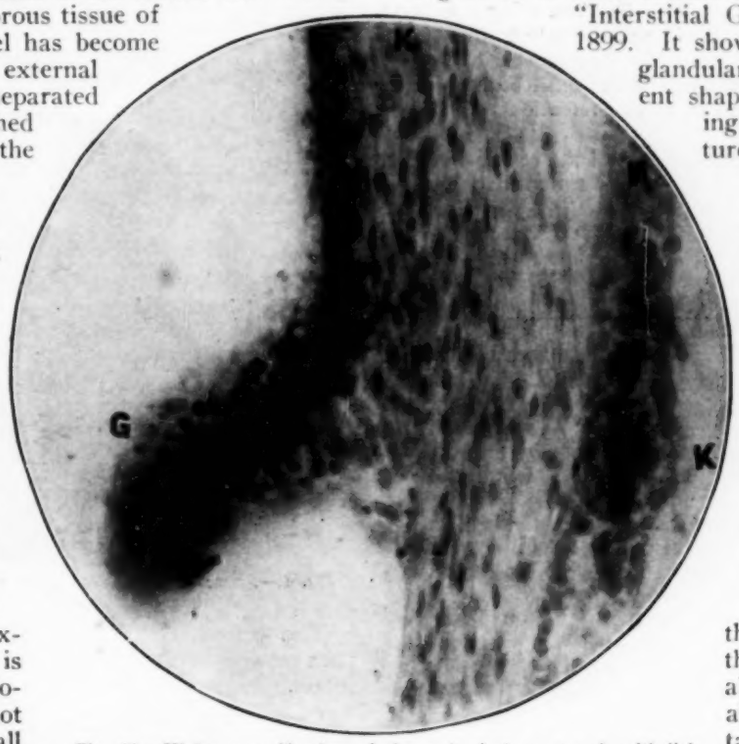


Fig. 21.—Higher magnification of the end of the external epithelial layer at *N*, in Fig. 5: *G*, granular or dead cells at the end of the disintegrating external epithelial layer; *K*, fibrous sac; *M*, epithelial layer; *N*, epithelial débris; × 400.

Figure 18 is one of the most interesting of all. It is located at the upper border of the sac and in the direct line of the advancing tooth. It shows the cutting edge of a human incisor tooth with a space between it and the external epithelium. Dead cells are seen on the surface of the enamel. The external epithelial layer is seen at the edge of this illustration. At the right, but not visible in the picture, is a break in the epithelial layer, and the fibrous sac has penetrated inside the layer. The fibrous tissue is observed below and in the space.

The epithelial cells or débris have migrated inside because of the fibrous tissue, instead of outside, as is usually the case.

Figure 19 shows the epithelial layer disintegrating at the right of the illustration; quantities of epithelial cells have migrated from the layer into the fibrous wall of the sac in the center. This picture is taken at the left of the crown of an incisor tooth at birth.

Figure 20 is taken at the right of a human incisor crown. Dead epithelial cells are seen on the enamel. The external epithelium is disintegrating. The live and dead cells are readily seen. Epithelial cells are seen at the left migrating into the fibrous structure.

Figure 21 shows the end of the epithelial layer taken from Figure 5. The layer is in close contact to the fibrous sac for the entire distance, except at the end. Cells are migrating into the fibrous sac at the right. At the end where the cells are not nourished, death is rapidly taking place.

Figure 22 is taken from a sheep and was shown in "Interstitial Gingivitis," published in 1899. It shows the cells in rows, in glandular groups, and in different shapes. The most interesting thing of all in this picture is the group of epithelial cells caught and embedded in the cementum. The wonder is that they are not more numerous.

Up to this period, that is, while the external epithelial layer is disintegrating, the dental sac is isolated from the surrounding tissues by a space. The fibrous tissue of the alveolar process now begins to develop toward the sac, and the space is closed, thus uniting the sac with the fibrous tissue of the alveolar process. Bone absorption now rapidly takes place, filling the fibrous tissue and encroaching on the fibrous sac. After the fibrous tissue of the alveolar process has united with the sac wall, the vascular supply has become established between the alveolar process and the sac, which has now become the peridental membrane, and for the first time cement begins to deposit on the dentin or on the external epithelial layer if it extends below the neck of the tooth.

In the study of embryology and histology of the jaws and teeth, my experience has been that one can obtain better results by taking the material of both animals and man at birth rather than embryos in their early development. The reason for this is that in all other tissues of the body, embryology and histology must be studied from the beginning of evolution, because the tissues go through the process of development but once. On the other hand, the dental tissues develop twice, and by taking the jaws at birth we have

4. The author first described epithelial cells in the peridental membrane and named them "epithelial débris" in his work on "Interstitial Gingivitis or Pyorrhea Alveolaris," in 1899.

all of both sets of teeth still in the jaws under different stages of evolution. The jaws and tissues are more stable in their growth, the tissues are more easily recognized, and the relation of one structure to another is better outlined.

### ABSTRACT OF DISCUSSION

DR. FREDERICK B. NOYES, Chicago: Dr. Talbot is mistaken in his interpretation of the material. The enamel is formed from the internal and not from the external layer. The external layer disappears and the internal remains. Nasmyth's membrane is a myth. The condition which Dr. Talbot found in many of these specimens is characteristic of all material prepared by the decalcified process. For some unknown reason, the cementum separates from the dentin in the process of decalcification, especially if the acid used is too concentrated. It is often exceedingly difficult to decalcify, especially if the blocks are large and we are trying to retain the entire tooth without separation of the cementum at the line of the dentin; but I do not believe that this difficulty arises because there is there a line of epithelial cells. There is no evidence to support that view. The one thing I want to emphasize is the way the blood vessels follow the dental papilla. The blood vessels enter the dental papilla through its base. That is one of the items which must be considered in the investigations in regard to the retention of pulpless teeth.

DR. MARTIN DEWEY, Chicago: Some of the conclusions Dr. Talbot arrived at are based on misinterpretations of the specimens. What he called dentin was only the dentin papilla. The dentin had not yet formed on those specimens. He called attention to the tooth of a dog which he showed as a perfectly calcified tooth and did not mention the gingival ridge which is so well developed in the dog's tooth. The root had not begun to calcify in that tooth.

DR. EUGENE S. TALBOT, Chicago: I am aware of the fact that the substance of this paper is new and original, and that the text is entirely opposed to the views laid down in our textbooks. While it is possible, and perhaps true, that these types are not to be found in every tooth in our present state of evolution, yet I have found these conditions in the teeth of many persons of advanced age as well as in the lower vertebrates. I believe that these conditions are atavisms, of lower vertebrate types, but I have not had sufficient experience with microscopic structures of the lower vertebrates to express a definite opinion. They seem, however, to be degeneracies. The opposite views expressed offhand by those who discussed the paper can have little or no weight since the same amount of research with the same materials must be done before an intelligent opinion can be expressed. I would hardly dare to present such radical views in regard to the freakish actions of the epithelial cells if I were not supported by such men as Drs. Ludvig Hektoen, E. R. LeCount and Adelbert M. Moody, of Chicago, who devoted considerable time to studying the microscopic slides of the epithelial structures.

**Social Hygiene Society.**—In April the Massachusetts Society for Social Hygiene, 50 Beacon Street, Boston, began the publication of a quarterly bulletin for the promotion of the purposes of the society. In the first number, the objects of the society are set forth, together with its organization and methods of work. In a review of venereal disease legislation, attention is called to the new Massachusetts law for licensing, inspecting and regulating hotels and private lodging houses which may be concerned in promoting prostitution and venereal diseases. The bulletin gives in full the Massachusetts regulations governing the reporting of gonorrhea and syphilis. For the benefit of the public, the society also circulates pamphlets on social hygiene subjects, among them being Circular No. 4 on Venereal Diseases, and also a list of publications on social hygiene subjects. The executive committee of the organization consists of Charles W. Eliot, Earnest B. Dane, Dr. Hugh Cabot, Dr. David L. Edsell and the Rev. G. W. Miner.

## OBSERVATIONS ON THROAT SMEARS IN MEASLES, RUBELLA (GERMAN MEASLES) AND SCARLET FEVER *

RUTH TUNNICLIFF, M.D.
CHICAGO

In previous articles,[1] I have described gram-positive diplococci, isolated in anaerobic cultures from the blood of measles and rubella patients. The measles diplococcus is small and round; the rubella diplococcus is larger, elongated, with pointed ends and a capsule. Diplococci similar to those isolated from the blood were also cultivated from the throat, nose, eye and ear of measles patients, and from the throat of rubella patients.

Examination of smears made early in these diseases from the tonsils and anterior pillars of the fauces has been found to show large numbers of diplococci corresponding morphologically to those found in the cultures. These diplococci begin to disappear with the abatement of the throat infection.

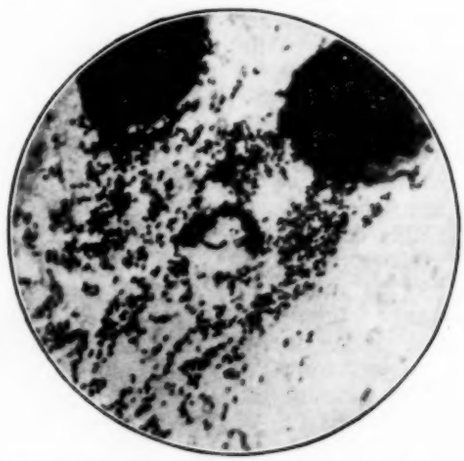

Fig. 1.—Smear from measles throat; carbol-gentian violet; × 1,000.

The tonsils or anterior pillars of the fauces, the part most inflamed, is swabbed with a sterile swab, the material smeared rather thickly on a clean glass slide, fixed with heat, stained a few seconds with carbol-gentian violet, washed with water, and dried. The material may be smeared in serum and stained with some capsule stain, but the carbol-gentian violet stains quickly and gives a perfectly clear picture.

Of 135 throat smears examined, 18 were from measles, 29 from rubella, 30 from scarlet fever, 10 from diphtheria, 10 from streptococcus sore throat, 8 from mild (simple) sore throat, and 30 from normal throats.

As a rule the smear from a measles throat shows a variable number of polymorphonuclear and epithelial cells, and many small, round diplococci about 0.5 micron in length.

A smear from a rubella throat shows few if any leukocytes, but many epithelial cells, containing elongated, pointed cocci in pairs, sometimes in chains, often showing a narrow capsule. The diplococci are also

* From the Memorial Institute for Infectious Diseases.

1. Tunnicliff, Ruth: The Cultivation of a Micrococcus from Blood in Pre-Eruptive and Eruptive Stages of Measles, THE JOURNAL A. M. A., April 7, 1917, p. 1028; Observations on the Bacteriology and Immune Reactions of Rubeola (Measles) and Rubella (German Measles), Jour. Infect. Dis., 1918, **22**, 462.

seen outside the cells, but are especially characteristic when on the epithelial cells.

Smears from scarlet fever throats show many polymorphonuclear leukocytes and a variable number of cocci, usually round, in pairs, or chains of rarely more than four, with generally a wide capsule.

Fig. 2.—Smear from rubella throat; carbol-gentian violet; × 1,000.

I find that the hemolytic streptococci isolated from the throats of scarlet fever patients as a rule show a capsule, at least in the first generation. This is in accord with the observations of Smillie,[2] who found that freshly isolated hemolytic streptococci had a "capsular substance," disappearing rapidly on cultivation. He does not consider it a true capsule. The encapsulated diplococci in the smears are readily differentiated from cocci with a clear zone of retraction.

It has not been possible to distinguish the diplococcus in the scarlet fever throat smears from those in nonscarlatinal throats containing hemolytic streptococci (diphtheria, streptococcus sore throat, and measles). In a case of rubella following scarlet fever, both types of diplococci were observed in the throat smears.

Fig. 3.—Smear from scarlet fever throat; carbol-gentian violet; × 1,000.

If the tonsils contain crypts so that a great variety of bacteria are present, it may be impossible to recognize any characteristics pointing to the source of the smear. A successful smear from the diagnostic point of view must contain one predominating diplococcus.

2. Smillie, W. G.: Jour. Infect. Dis., 1917, **20**, 45.

The three types of diplococci described were not recognized in the thirty normal throats, except four times, when the rubella coccus was found in persons closely associated with rubella patients. The rubella diplococcus was also observed in three of the eight cases of so-called simple sore throat, two in roommates and one in a nurse of rubella patients. These smears were made during an epidemic of rubella, and doubtless the other diplococci can be found in smears of normal throats during epidemics of measles and scarlet fever.

There is rarely much difficulty in making a diagnosis of measles, but at times it is not easy to differentiate a mild case of scarlet fever from rubella. In the Durand Hospital, throat smears are proving helpful in differentiating these two diseases, especially in conjunction with leukocyte counts, as the number of leukocytes is increased in scarlet fever and reduced in rubella.

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# RUPTURE OF THE UTERUS THROUGH THE CESAREAN SECTION SCAR *

EMIL NOVAK, M.D.
BALTIMORE

The number of cases of rupture of the uterus following cesarean section that had been reported up to 1913 was sixty-three, according to the exhaustive review of the literature published in that year by Findley.[1] By 1916 the number had risen to seventy-four,[2] and since then a number of other cases have been reported. The occurrence must, therefore, be looked on as relatively rare, so that it would seem to be worth while to put even a single case on record. Aside from the infrequency of rupture of the cesareanized uterus, I have been led to report the following case by certain rather unusual circumstances attending it, and also by its pertinence to the debate as to the correctness or incorrectness of the old dictum, "Once a cesarean, always a cesarean."

## REPORT OF CASE

*History.*—A white woman, aged 19, had had a cesarean section performed, May 5, 1916, the indication having been intrapartum eclampsia. The operation was performed by one of the most competent obstetricians in Baltimore. The child was delivered dead, but the mother recovered from the operation and her convalescence was uneventful, except for a slight infection of the abdominal incision.

The patient enjoyed good health and menstruated regularly up to October, 1917. The last regular menstruation appeared, Oct. 13, 1917. Some months later the patient consulted Dr. B. O. McCleary, who diagnosed pregnancy. The course of this second pregnancy was normal in every way. At about the expected date of confinement, July 15, the patient went into labor, and was then transferred to the hospital. Her own statement as to this confinement is that there were only two or three typical labor pains, these being followed by severe and constant pain over the entire abdomen, associated with some rigidity of the abdominal walls. This diffuse pain persisted for three days, being accompanied by a fever ranging from 99 to 101.5 F., and by a slightly accelerated pulse, never higher than 100. After the subsidence of the pain, on about the fourth day, the patient was able to get around fairly comfortably, but she remained in the hospital awaiting the reinauguration of labor. According to Dr. McCleary, no fetal heart sound was to be heard

* From the Gynecological Department of Johns Hopkins University.
1. Findley, P.: Am. Jour. Obst., 1916, **74**, 411.
2. Bell, J. N.: Am. Jour. Obst., 1916, **74**, 950.

after this spurious labor, nor did the patient perceive any fetal movements.

*Examination.*—About six weeks after the expected time of confinement, August 29, I saw the patient in consultation with Dr. McCleary. At this time the abdomen was enlarged to the size of a full term pregnancy, the walls being quite rigid, so that the fetal parts could not be mapped out. No fetal heart sounds were heard. On vaginal examination, I was surprised to find that no presenting part could be felt, the cervix being closed and fairly firm, not resembling in feel the cervix of pregnancy. In view of the rather clear-cut history, and of the foregoing findings, only one diagnosis seemed possible—that of rupture of the uterus with extrusion of the fetus into the abdominal cavity.

*Operation.*—The operation was performed, September 1. A long incision was made paralleling that of the previous cesarean section. Just above the umbilicus a thick, spongy tissue was encountered, which, on extension of the incision, was found to be the placenta. A few centimeters above the placental area, the amniotic sac was entered. About 2 quarts of clear amniotic fluid escaped. A large, partly macerated fetus was found lying in the abdominal cavity in an oblique position, the head being above and to the right, under the dome of the diaphragm, and the extremities extending downward and to the left. The amniotic sac was intact, except where it had been incised on the opening of the abdomen. The uterus had undergone involution after rupture, being about the size that one would expect six weeks postpartum. The anterior wall of the uterus had been split asunder through the line of the old incision, the rift extending from the fundus to about the level of the internal os. This is well shown in the accompanying illustration, which also shows the manner in which the placenta was turned out through the uterine gap, partly reimplanting itself later on the anterior parietal peritoneum. Both fallopian tubes were covered with light, sheetlike adhesions. The right ovary was thoroughly disorganized through cystic degeneration, being about the size of a pullet's egg.

The arrow at *x* points to the rent in the anterior wall of the uterus. The placenta (*p*) has everted itself through the uterine wound, reimplanting itself on the anterior parietal peritoneum. Attached to the placenta is the fetus, showing beginning maceration.

A subtotal hysterectomy was performed, the left ovary, which was normal, being conserved. On removal of the uterus, together with the attached placenta, umbilical cord and fetus, an enormous cavity was left. The walls of this were formed in a general way by the parietes anteriorly, and by the adherent coils of intestine above and behind. It was a beautiful illustration of foreign body encapsulation. The inside of the cavity was lined by tightly adherent amniotic membrane, which was removed where this was possible. The large cavity left on the removal of the fetus was then marsupialized, several large cigaret drains being introduced in various portions, and then brought out through the abdominal incision. The latter was closed in tiers in the usual manner, being reinforced by a number of interrupted silkworm-gut sutures. Recovery from the operation was uneventful, the patient being discharged from the hospital three weeks after the operation.

## COMMENT

A striking feature of this case was the fact that the occurrence of uterine rupture was not associated with internal hemorrhage or with shock. This observation, while unusual, is not unique, a case similar in this respect having been recently reported by Neill.[3] The uterine scar in my patient seems to have been separated without producing any hemorrhage whatsoever, perhaps because of the tampon-like action of the fetal head, as it was delivered through the gap. Certainly there was no sign of either old or recent hemorrhage at the subsequent laparotomy, nor was there any appreciable degree of shock at the time of the occurrence of the rupture. As has been stated, there was more or less diffuse abdominal pain for a few days, but after that the patient was comparatively comfortable, walking about the ward with little inconvenience.

From the standpoint of obstetric practice the most important feature of this case is furnished by the history of an infected abdominal incision, with slight fever for several days, after the cesarean section which had been performed in 1916. The investigations of Williams,[4] Findley[1] and others assign great significance to such an occurrence. It appears to have been pretty well demonstrated that uterine rupture after cesarean section practically never occurs when the convalescence from the cesarean operation has been entirely normal, that is, when there has been no febrile reaction or other evidence of infection of the uterine scar. In other words, assuming that the uterine wall has been properly sutured, rupture in subsequent pregnancies will not take place if the uterine incision heals promptly, without infection. The invasion of the uterine scar by decidual elements in subsequent pregnancies, to which some have attached importance as predisposing to rupture, is probably of much less importance than the element of infection. In my patient, the occurrence of stitch infection in the abdominal incision after the cesarean section may be taken as prima facie evidence of infection and poor healing of the uterine incision, which had been sutured by the best technic.

As far, therefore, as the bearing of the case on the general question is concerned, it emphasizes the ominous significance of infection in the uterine incision as an element of danger in subsequent pregnancy. On the other hand, nothing in the case shakes in any way the position held by most obstetricians that the management of cesarean patients in subsequent pregnancies should not be too strongly influenced by the fact that rupture of the uterus occurs in a small proportion of the patients, probably not exceeding 2 or 3 per cent.

26 East Preston Street.

3. Neill, T. E.: Am. Jour. Obst., 1917, **75**, 235.
4. Williams, J. W.: Bull. Johns Hopkins Hosp., 1917, **28**, 335.

# *Clinical Notes, Suggestions, and New Instruments*

## APPARATUS FOR ARTIFICIAL PNEUMOTHORAX

CHARLES M. MONTGOMERY, M.D., PHILADELPHIA

Even the smallest apparatus now on the market for the administration of artificial pneumothorax is unduly bulky and heavy to carry by hand. To obviate these difficulties the apparatus described herein, which, incidentally, costs practically nothing, has been found useful. It requires only one bottle, the gas container, the gas in this bottle being displaced by water that enters the container from a funnel. The neck of the bottle is fitted with a rubber stopper of the type shown in Figure 1 or smaller. This stopper has two perforations, one to hold the funnel stem, the other to hold the exit tube, which is made of glass bent at an angle. When the cork is in place in the bottle and water is poured into the funnel, the water will run into the bottle, displacing the air, which escapes by way of the exit tube, unless, as will happen under certain conditions, some of the air finds its way back through the funnel stem and so out through the funnel. This is effectually prevented by using a trap such as a glass U-tube, one limb of which is connected with the lower end of the funnel stem by a piece of rubber tubing, as shown in Figure 1. If air is prevented from escaping through the glass tube of exit, the water soon ceases to flow from the funnel into the container. Under these conditions the pressure in the container will be represented by the distance between the free end of the U-tube used as the trap, and the upper level of water in the funnel. This distance, and therefore the pressure, measured in centimeters of water, are capable of a satisfactory degree of regulation. It is preferable to see that the funnel does not at any time become entirely empty.

A bottle of any desired size may be used as the gas container, one of about a liter capacity being shown to the right in Figure 2. Beyond the tube of exit from the container, the tubing, etc., are arranged very much as in the customary way. For convenience the manometer is held against the container bottle by rubber bands. If air is selected for treatment, the different pieces in the apparatus can be separated from one another so that they will occupy a very small space. In fact, if one carries a perforated cork of the proper size, he can usually pick up in the patient's house or in a drug store a suitable bottle to act as container. If nitrogen is preferred, the container must be carried with the cork in place and with the funnel and exit tube in the cork, the opening in each being closed to prevent escape of the gas. The apparatus set up in this way will, of course, occupy a slightly larger space than if it is taken apart; but the weight will be no greater. A small handbag will suffice to hold the apparatus. The only thing that needs to be carried in a sterile condition is the cotton filter. For this purpose a wide glass tube about 5 inches in length fairly firmly packed with cotton has proved satisfactory. The needle and the tubing, etc., between the needle and the filter can be sterilized at the last minute.

The withdrawal of pleural fluid and its replacement by air, performed with a single needle and puncture, can readily be carried out by using the apparatus just described. The entire outfit essential for alternate withdrawal of fluid and replacement by gas is shown in Figure 2, the gas container with empty funnel in position being on the right, and the aspirating bottle with suction apparatus in front of it being on the left. The needle is seen attached by rubber tubing to an inverted glass Y-tube, the right limb of which leads to the aspirating bottle, a single stopcock being placed between. The left limb of the inverted Y-tube leads indirectly to the gas container, the bottle shown in the right of the picture, with the manometer supported by rubber bands. Between the Y-tube and the container are seen: rubber tubing, stopcock, rubber tubing, glass tube containing cotton to filter the air (shown in the foreground), and rubber tubing beyond the filter, the distal end of which connects with a second glass Y-tube. The right limb of this leads to the manometer, with one stopcock between; the other limb leads to the tube of exit in the gas container, a single stopcock intervening. When there is water in the funnel and the pressure in the aspirating bottle is negative, proper manipulations of the various stopcocks will permit alternate withdrawal of fluid and replacement by air, the needle being in fluid located in the pleural cavity.

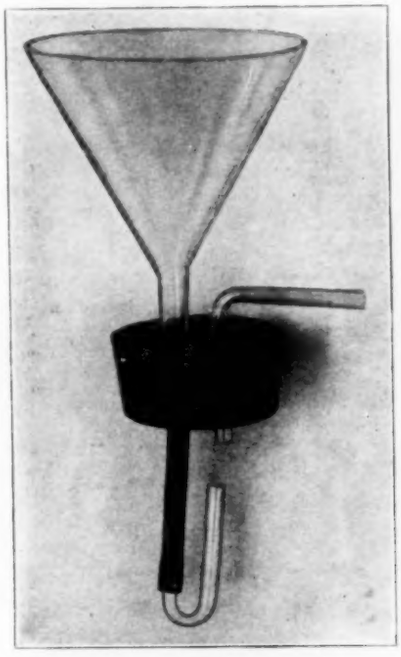

Fig. 1.—Stopper and funnel.

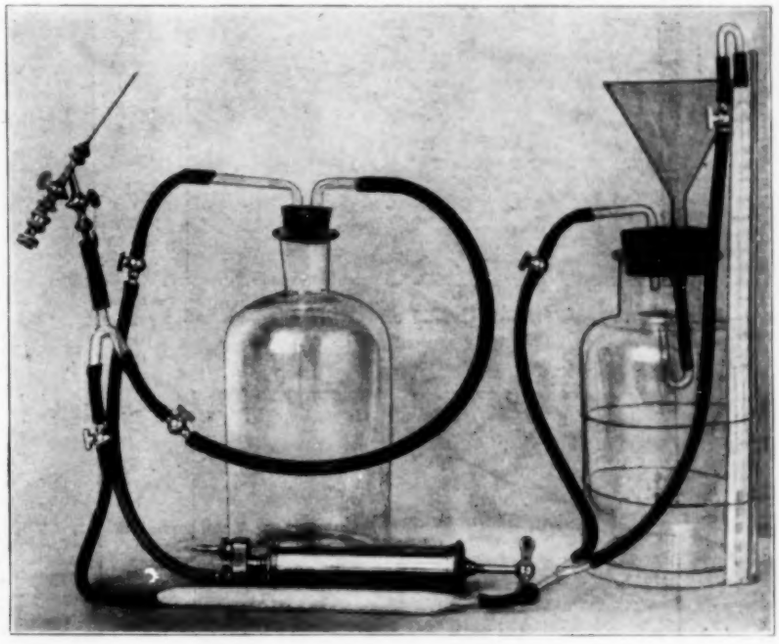

Fig. 2.—Combined apparatus for aspiration and artfical pneumothorax.

Figure 3 shows a patient with a large amount of fluid on the left side and marked dextrocardia, while even the trachea is misplaced far to the right.

Figure 4 shows the same chest after withdrawal of fluid and replacement with air, a single needle puncture being used.

The fluid in this case was purulent, the result of tuberculosis, and had existed for six months, with the result that

the heart had not only been pushed to the right but had actually become anchored there, as manifested by severe distress and a marked negative pressure after withdrawal of a

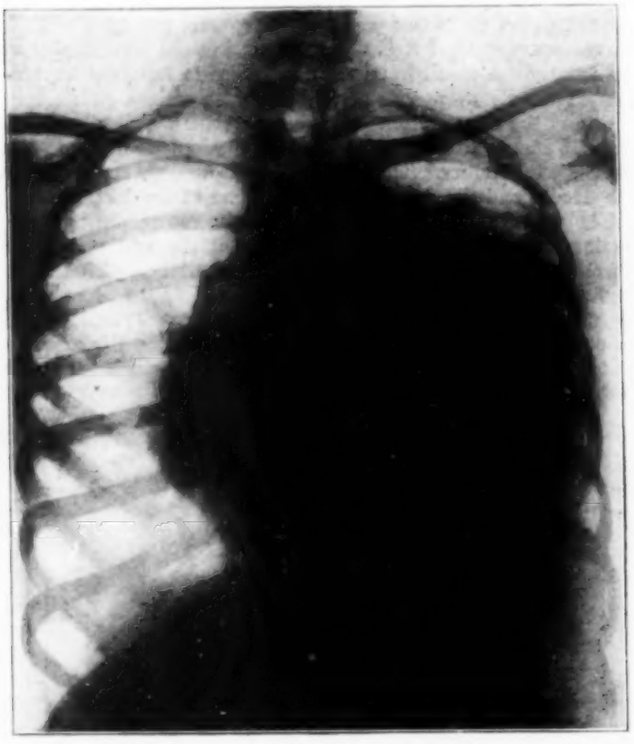

Fig. 3.—Patient with large amount of fluid on left side and marked dextrocardia.

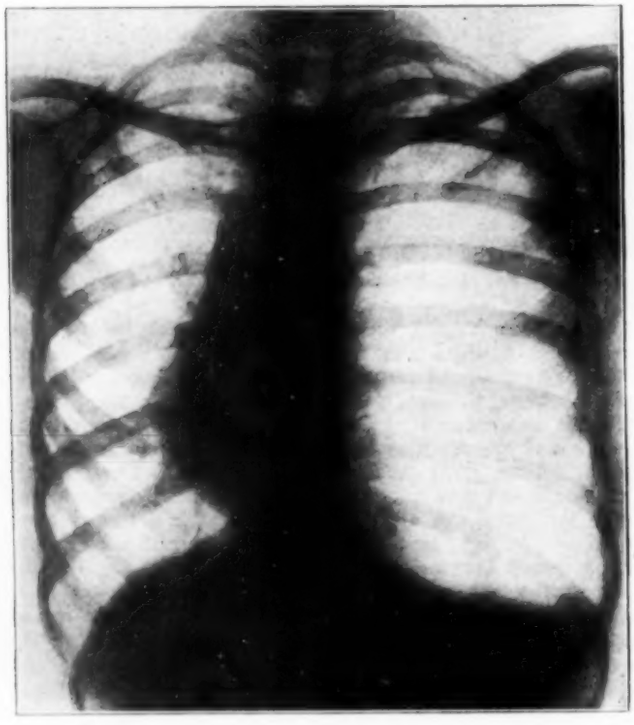

Fig. 4.—Chest of patient after withdrawal of fluid and replacement with air.

few hundred c.c. of fluid, the symptoms and negative pressure being immediately altered for the better by injection of air. Alternate withdrawal of fluid and replacement by air were continued till the pleural cavity was almost completely emptied of fluid, about 2,200 c.c. in all, the patient being left entirely comfortable and the intrapleural pressure being about the same as at the start.

2210 Locust Street.

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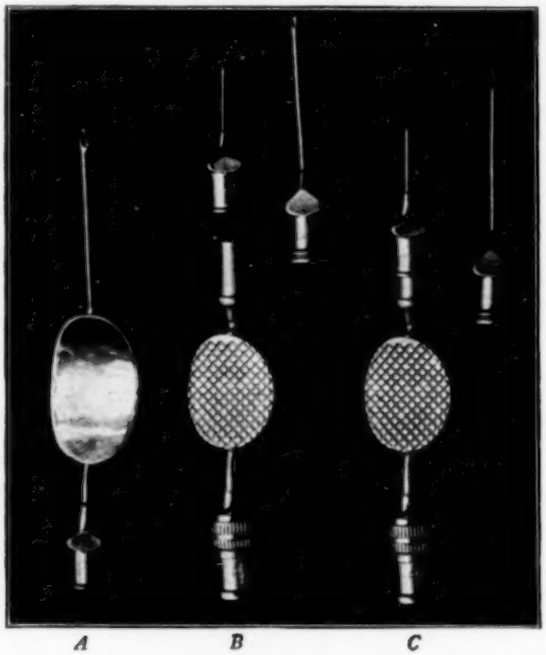
## A "SCHREIBER" ADAPTER FOR INTRAVENOUS INJECTIONS *

J. H. Stokes, M.D., Rochester, Minn.

Those who appreciate the good qualities of the Schreiber needle in meeting the difficulties of intravenous injection technic will appreciate the serviceability of the device here illustrated, which has been in use in my service for several months. The Schreiber needle is made in only one, or at most two sizes. This adapter makes possible the use of a needle of any size desired to meet the indications in a particular case. The needle proper is attached to the standard Lüer hub of the adapter, and adapter and needle are then used together as one instrument, in accordance with a technic that I have already described.[1] The device was developed in cooperation with Mr. P. L. Pinkerton of the Precious Metals



*A* *B* *C*

*A*, Conventional type of Schreiber needle; *B*, Schreiber adapter with two different types of needles; *C*, Schreiber adapter with 22 gage hypodermic needle attached.

Tempering Company, who submitted a sketch and later a specimen for clinical trial. Whenever, for any reason, it is found necessary to inject amounts of solution too large to be readily administered with a syringe into small or difficult veins, such as those of the scalp, hand and wrist, this adapter has proved exceedingly useful.

* From the Section of Dermatology and Syphilology, Mayo Clinic.

1. Stokes, J. H.: Certain Technical Refinements in Methods of Intravenous Injection, Med. Rec., New York, 1917, **152**, 13.

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**Recrudescence of Malaria in England.**—Attention has been called to the possible recrudescence of malaria in England as one of the minor results of the war. It is known, says the *Scottish Geographical Magazine*, that anopheline mosquitoes exist in England, and men returning from malarious districts of the east and the Balkans with the parasites in their blood afford favorable foci for the spread of the disease in England. Some cases of indigenous malaria, it is said, have already been found in England and the Local Government Board is already making inquiries looking to precautions against the spread of the disease from returned carriers.

## A NEW INHALER FOR NITROUS OXID ANESTHESIA

ALBERT H. MILLER, M.D., PROVIDENCE, R. I.

This inhaler for nitrous oxid or for nitrous oxid with oxygen or with ether vapor comprises a celluloid face piece with an inflatable rubber rim, an inspiratory valve, an expiratory valve, and a combined supply and rebreathing bag.

In the top of the face piece are two openings, in one of which is mounted the expiratory valve, closed by an outwardly opening disk of aluminum or mica controlled by a delicate and adjustable spring. The second opening communicates by a short tube with the base of a cup, open at the top and having two openings in the side, one for the admission of air and the other communicating by a short tube with the supply and rebreathing bag. A second cup is inverted and ground to fit closely into the outer cup. Diametrically opposite in the sides of the inner cup are two openings, one fitted with the inspiratory valve, closed by an inwardly opening disk of aluminum or mica. The inner cup revolves within the outer and is provided with a stop for three positions, in the first of which the patient breathes air through valves, the opening of the supply bag being closed; in the second, gas through valves, the air opening being closed; in the third position, gas to and fro, the inspiratory valve being idle.

Fig. 1.—Inhaler assembled.

The first position of the inspiratory valve, allowing air to be breathed through the valves, permits the adjustment of the inhaler to the face with the supply bag filled. The patient tests the apparatus by breathing air through valves before gas is turned into the face piece. This important point, brought out by Hewitt many years ago, is frequently overlooked at present.

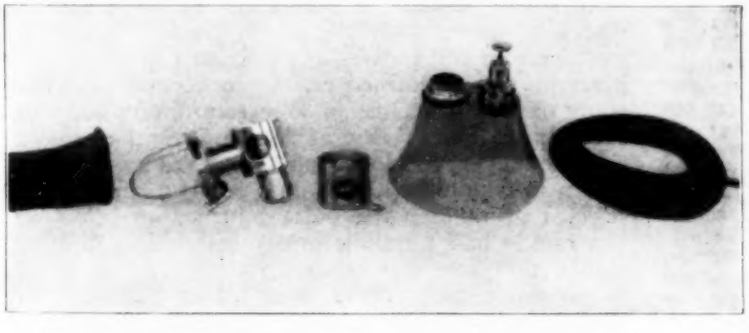

Fig. 2.—Parts of inhaler: From left to right, wide mouthed bag; outer cylinder with bag adjustment, wire mask and supply tube; inner cylinder with inspiratory valve; face piece with expiratory valve; rubber rim.

The second position, allowing inspiration of gas from the supply bag and total expiration through the expiratory valve, results in a more rapid replacement of intrapulmonary air by gas than when rebreathing is indulged in from the first, and a correspondingly rapid induction of anesthesia and absence of excitement.

The third position, with the inspiratory valve idle, converts the supply bag into a rebreathing bag. With a constant flow of gas into the bag, the first part of each expiration, consisting largely of unused gas from the upper respiratory passages, passes into the bag until it is completely filled. The latter part, coming from the lower respiratory channels and pulmonary alveoli, passes out through the expiratory valve. The proportion of the expiration which is retained in the bag and rebreathed depends inversely on the rate of flow of fresh gas into the bag; the more rapid the flow of gas, the less space remains to be filled by the expiration and the greater proportion of the expiration escapes. The proportion of rebreathing may be estimated by noting the point in expiration at which the expiratory valve opens. The tension of the spring controlling this valve is just sufficient to keep the valve closed until the bag is filled.

To sterilize, the expiratory valve is unscrewed and removed. The cups containing the inspiratory valve are separated and detached from the face piece. The inspiratory valve cap is unscrewed and removed. The supply and rebreathing bag, which is wide mouthed and reversible, together with the rubber rim, is sterilized in boiling water. All metal parts are sterilized in boiling water. The celluloid face piece may be placed in boiling water momentarily. It would be destroyed by prolonged boiling.

This inhaler is light, simple, efficient, and readily sterilized.

131 Waterman Street.

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## METHOD FOR STAINING THE DIPHTHERIA BACILLUS

FOSTER A. BECK, M.D. (WINDGAP, PA.)
First Lieutenant, M. R. C., U. S. Army, in Charge of Laboratory, Post Hospital, Aeronautical General Supply Depot and Concentration Camp
GARDEN CITY, L. I., N. Y.

The examination of a large number of smears taken from throat cultures for the diphtheria bacillus, led me to devise a method of staining that has given me excellent results. It is as follows:

STAIN 1

| | |
|---|---|
| Gentian violet (saturated alcoholic solution) | 10 c.c. |
| Acetic acid solution, 4⅓ per cent. (distilled water being used) | 90 c.c. |

STAIN 2

| | |
|---|---|
| Bismarck brown | 0.480 mg. |
| Distilled water | 125 c.c. |

The water should be heated to boiling, then the Bismarck brown should be added, and the mixture boiled for one or two minutes and filtered cool.

The smear should be spread thin and even on the slide, dried in the air and then passed several times through the flame of an alcohol lamp or a Bunsen burner to fix.

The specimen should be stained for thirty seconds with Stain 1, the excess stain washed off with water, and without the specimen's being dried Stain 2 should be added for ten or fifteen seconds, and the specimen washed in running water, dried and examined with oil immersion.

The bacillus, when present, stains as follows: The body of the bacillus becomes a delicate shade of purple or brown, and the clubbed ends and polar bodies, dark purple or black.

Staphylococci, streptococci and pneumococci, when presented, should be stained brown, or brown with a tint of purple.

This method of staining has given me an average of 5 per cent. more positive cultures than any of the other standard methods.

An average of two minutes is the time required to stain the specimen and to examine and make the diagnosis.

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**Regimental Officers.**—The regimental medical officer is a person of protean pursuits. His interests reach from the cleanliness of the cook's hands to the care of the wounded under fire.—McCombe and Menzies.

## Military Medicine and Surgery

# TRENCH FEVER*

### A REPORT OF CLINICAL OBSERVATIONS AND RESEARCH AS TO THE ETIOLOGY, PATHOLOGY, PROPHYLAXIS AND TREATMENT OF TRENCH FEVER AMONG TROOPS

MAJOR W. BYAM, R. A. M. C.; CAPT. J. H. CARROLL, M. R. C., U. S. ARMY; LIEUT. J. H. CHURCHILL, R. A. M. C. (T.); CAPT. LYN DIAMOND, R. A. M. C.; LIEUT. L. LLOYD, R. A. M. C.; CAPT. V. N. SORAPURE, R. A. M. C., AND LIEUT. R. M. WILSON, R. A. M. C.

HAMPSTEAD, ENGLAND

(*Continued from page 26*)

## THE CHRONIC DISEASE

It has become evident that in a large proportion of trench fever patients invalided to England there is a tendency to advance through a subacute toward a chronic condition with symptoms of disordered action of the heart and also in some cases of neurasthenia. The features of the chronic condition are most easily described by citing a case history of one of our patients, an A 1 man who went through his training without difficulty.

In November, 1915, he went to France, where he remained at full duty till the spring of 1916, when he reported sick several times with pains in the back, head and legs. This was diagnosed as "influenza." After he returned to duty he noticed much aching in the knee joints and also some headache. He was admitted to hospital in France three times, each time with fever. In September, 1916, he was admitted to hospital (his third admission) with pains in the back and legs, and a temperature of 103 F. He was confined to bed for four weeks. A diagnosis of rheumatic fever was made and the patient invalided to England, where he spent two weeks in bed and ten weeks more in hospital. On getting up he noticed that he was breathless.

His headaches continued until his return to France in March, 1917. Four days later he reported with fever and was excused duty for four days. He then finished his retraining. In the middle of June he again reported sick with fever and pains in the head, back and legs, becoming worse in the evening. This time he was excused duty for ten days.

June 30, 1917, he was sent to a field ambulance with symptoms as above. From there he passed to a base hospital where he remained fourteen days. His case was diagnosed as trench fever and he was invalided to England. He was admitted to hospital at Hampstead, July 14, 1917. This was approximately the four hundred and seventieth day of the disease. From this date there were frequent small rises of temperature. The patient was a man of good physique but looking ill. He complained of constant aches in the legs and shins and said his legs felt like giving way under him. The hands and feet were sweating and tremulous. A vivid red tache was present on light stroking. The area of splenic dulness was enlarged to percussion, but on account of tenderness of the left hypochondrium the spleen could not be palpated. The patient complained also of breathlessness on exertion, palpitation of the heart, pain over the precordium and giddiness, the symptoms known as effort syndrome or disordered action of the heart. The heart was not enlarged, and the sounds were normal. He was markedly exhausted.

This case is not an exaggerated picture of the established chronic trench fever, which may therefore be defined as a state of marked debility with or without attacks of slight fever and aching and characterized by a hyperexcitability of the nervous system in general. The symptoms encountered may be thus summarized in the order of their importance: (1) exhaustion; (2) giddiness and fainting; (3) headache; (4) breathlessness on exertion; (5) pain; (6) irritability; (7) lassitude; (8) sweating; (9) coldness of the extremities; (10) palpitation and cardiac irregularity, and (11) fever.

Before the symptoms are discussed in detail, it must be pointed out that all these symptoms are present in the major portion of chronic cases.

In the handling and distribution of cases necessitated by military exigencies, patients with predominant symptoms will tend to be evacuated to cardiac hospitals, patients in whom nervous symptoms are marked to neurologic hospitals, and patients complaining of pains and aches to institutions for the treatment of rheumatic conditions. All these patients, however, if carefully examined will be found to show, in greater or less degree, the syndrome detailed above.

### ACTION ON THE VAGUS SYSTEM

While it is extremely difficult to prove on what part of the central nervous system trench fever acts, we believe that a body of evidence exists which points to a specific action on the vagus. This evidence may be grouped under three heads:

1. It was observed by Lewis while studying disordered action of the heart that there was a tendency in some of these cases to what was described as "vagus lag," that is, a failure of the pulse rate to return to normal after the performance of a specific exercise. In other cases of disordered action of the heart the pulse returned rapidly to normal. A close study of this phenomenon (the return of pulse rate after exercise) in cases of trench fever has shown that the tendency is for a rapid and even exaggerated return to take place. Thus in a series of eight cases selected at random the pulse returned to below its rest rate in half a minute in two instances. In other words, the pulse had reached its normal rate in all in normal time. These were cases entering the chronic stage of the disease. In the acute stage a relatively slow pulse is the rule, and the return of the pulse rate to normal after effort is invariably exceedingly rapid. "Vagus lag" therefore in these cases is replaced by "vagus pull." This becomes more evident when a comparison is made with the return of the pulse in gas-poisoning controls.

2. It was observed that in a proportion of patients suffering from trench fever a long, deep inspiration was attended by a marked slowing of the pulse, with or without loss of volume. In a few instances, only loss of volume was observed. The phenomenon was studied in control cases with no history of trench

*NOTE.—The work on which this paper is based has been carried out at Hampstead for the War Office Trench Fever Investigation Committee, of which Major-General Sir David Bruce, K.C.B., F.R.S., A.M.S., is chairman. The members are: Lieut.-Col. D. Harvey, C.M.G., R. A. M. C.; Prof. H. Plimmer, F.R.S.; A. W. Bacot, Esq.; Major W. Byam, R. A. M. C.; Lieut.-Col. H. French, R. A. M. C. (Temp.); J. A. Arkwright, Esq.; Sir W. M. Fletcher, K.B.E., F.R.S., and Lieut. A. F. Hird, Gen. List. (Temp.), Secretary.

fever and no symptoms of disordered action of the heart. It was not seen in these cases. To determine whether this slowing of the pulse bore any relationship to vagus activity, a number of patients showing it were given a dose of atropin sulphate, 1/33 grain. In each case atropin was found to abolish or greatly modify the effect of prolonged inspiration. The conclusion, therefore, that the phenomenon was definitely related to vagus activity became a difficult one to refute.

3. It was a matter of observation that a number of trench fever patients revealed cardiac irregularities during exacerbations of the disease, which irregularities disappeared in the intermissions.

A patient came under our observation suffering from acute trench fever, subsequently developed paratyphoid B, as proved by blood examinations, and finally relapsed twice with characteristic symptoms of trench fever, which symptoms had been conspicuously absent during the paratyphoid attack. During the initial trench fever his pulse tracings showed an extrasystole every third beat; throughout the paratyphoid fever no cardiac irregularity could be detected, though the attack was a severe one and the observations made were numerous, while with the trench fever relapses the extrasystoles returned as before.

Granted that a lowering of the sinus excitability, thus allowing stimuli to arise in other parts of the auricular wall, is a predisposing cause of this irregularity, it is manifest that vagus hyperexcitability would act toward this end. These three aspects when viewed in conjunction appear to us to offer at least a strong suggestion of a specific action on the vagus in trench fever. This view is strengthened when the tendency to a slow pulse rate in the acute cases, to fainting attacks and collapse is taken into consideration. Our observations, which are supported by those of the workers in France, show that the transition from bradycardia to tachycardia in trench fever cases usually takes place after the twenty-first day of the disease, and in the greater number of cases is found from the twenty-first to the fortieth day. Physical activity is not a necessary factor in the causation of disordered action of the heart, as many patients develop the condition while lying in bed. The impression exists, however, that allowing the patient up does increase the severity of this sequel. In an attempt to analyze the significance of the change in pulse rate certain coincident clinical phenomena were found to be of importance, as profuse sweating, flushing, headache, throbbing of the vessels of the neck, tremulousness, and in some cases discomfort in the throat and chest. These phenomena have been remarked by many observers, and have frequently been ascribed to hyperthyroidism. This view has been disputed, however, notably by Lewis, who found that the administration of thyroid extract by no means tended to exaggerate the symptoms of disordered action of the heart, a state of matters which he suggested might have been expected had hyperthyroidism been the basis of the syndrome. We ourselves, extending Lewis' work, have found in addition that far from exaggerating the symptoms, large doses of thyroid extract distinctly and definitely cause relief.

This finding has been confirmed in so many cases and with such uniformity that the beneficial effect of thyroid extract is not an accident.

The following are instances of what we mean:

CASE 1.—On the forty-sixth day of the disease, the patient developed marked sensations of exhaustion, shakiness, profuse sweating, and dyspnea on exertion. The pulse was rapid and presented the appearance of disordered action of the heart on the chart. He was then put on 2 grains of thyroid extract thrice daily, and immediately the symptoms disappeared. A week later the thyroid extract was discontinued, and the symptoms returned with a tendency to fainting, severe headache and giddiness. A further course of thyroid extract was begun, and all symptoms again disappeared. On the patient's again being taken off thyroid extract, the symptoms returned.

CASE 2.—On the thirtieth day of disease the patient developed profuse sweating, marked tremor, dizziness, headache and tachycardia. He was then put on 2 grains of thyroid extract three times a day, and at once got rid of his symptoms. Treatment in this case has not been discontinued, and the patient remains well.

This experience was encountered even in cases in which there was definite thyroid enlargement, as the following clearly demonstrates.

CASE 3.—Thyroid enlargement and discomfort in the neck accompanied the appearance of symptoms of disordered action of the heart. This patient could take 9 grains of thyroid extract daily without ill effect, indeed with comfort, for he improved steadily while taking it.

It must not be understood, however, that the results of our use of thyroid extract in cases of disordered action of the heart following trench fever have led us to the conclusion formulated by Lewis, that hyperthyroidism plays no part in the mechanism of this condition. The most striking feature of the majority of early cases of trench fever is the disinclination of the patient to respond to calls for effort. This disinclination is no local weakness of the legs, but a general extreme exhaustion accompanied by fainting in many cases and by bradycardia. At this point, as has already been suggested, the dilator mechanism is in a high state of excitability, and the patient is literally without the power to relieve himself of the depressing effect produced. Indeed, the falling pulse rate and occasional simultaneous gastric disturbances, with sweating or pallor, stamp the attacks unmistakably as vagal and dilator in origin.

After the subsidence of the acute phenomena, it is found that the vagus system of these patients is not less excitable than it was at the onset of the disease, but the response to effort has now improved — in other words, the man is now able, by means of some mechanism which is brought into play, to compensate for the activity of his vagus mechanism when an effort is required of him. A lead in the direction of the true nature of this compensation has been given to us by the fact that in some cases enlarged thyroids have been encountered and also by the appearance of phenomena usually associated with hyperthyroidsm.

These observations, coupled with the good effects of thyroid administration, have brought us to the conclusion that the so-called hyperthyroidism seen in these cases is in the nature of a compensation to the depressor effects of vagus hyperexcitability.

The work of Cannon, Cattell and Levy has demonstrated that the mechanism of pressor effects, as opposed to depressor, involves the suprarenals and the thyroid. Cannon and Cattell[6] have placed the secretory innervation of the thyroid on a firm basis. They showed that thyroid secretion resulted from stimulation of the cervical sympathetic nerve and also from suprarenal secretion, the latter through the blood stream. That is to say, at times of suprarenal activity a call will be made on the thyroid secretion.

It is well known that vagal stimulation with its resulting depression calls for suprarenal or sympa-

6. Cannon, W. B., and Cattell, M.: Am. Jour. Physiol., 1916, **41**, 39.

thetic activity. This fact is well established in the work of Roger,[7] who says:

> When, in a normal rabbit, we excite by a faradic current the peripheral end of the cut vagus, we observe a true stoppage of the heart, that is to say, a diastolic fall, sharp and profound, which is almost always followed by a return of the beats. The curve resulting is V-shaped. The first excitation always produces the most marked effect.
>
> If now we carry out the experiment on a decapsulated rabbit, the first tracing obtained looks like normal tracing; but during the second faradization, the stoppage of the heart is prolonged and the return of the beat is made with difficulty.
>
> Continuing our excitations, we soon obtain diastolic periods lasting as long as thirty or even forty seconds. . . .
>
> How are we to explain these differences? We might say generally that the vagus in the normal rabbit shows less and less effect in repeated stimulations because it is becoming exhausted. If this were the correct explanation we should find the same phenomenon in the decapsulated rabbit. But since in the decapsulated rabbit exactly the reverse is found, we are forced to take into consideration the only element that differs in the two series of experiments—the suprarenal capsules. We thus arrive at the following conception:
>
> When the action of the vagus becomes preponderant, when it acts, that is to say, with full force on the heart, a reaction probably in the nature of a reflex is produced on the suprarenal capsules which give out epinephrin. This epinephrin counterbalances the action of the vagus, prevents the stoppage of the heart, and raises the arterial pressure.
>
> This conception leads to the supposition that an injection of epinephrin given to a decapsulated rabbit would cause the heart of that animal to respond like the normal rabbit's heart. That is exactly what happens.

The work of Cannon and others already referred to shows that this reflex stimulation of the suprarenals involves thyroid activity. Consequently the normal reaction of a man to excessive excitability of his vagus system will be a mobilization of epinephrin and thyroid and so a reaction based on the sympathetic system.

Examination of our patients shows that the effect of the toxin is a more general one than a purely cardiac vagal effect. There is in addition a depressor effect, a circulatory effect, resulting in fainting attacks of definite depressor and vagal origin.

In other words, not only is the heart held in inhibition, but also the wide splanchnic blood lake is dilated and a severe fall of blood pressure, similar to that seen during stimulation of the depressor nerve results. This effect has been thus emphasized by Lewis[8] in describing a fainting attack observed in one of his patients:

> The simultaneous fall of pulse rate and blood pressure stamps the attacks as vagal in origin, a view fully confirmed by the occurrence of simultaneous gastric disturbances.

Epinephrin, as is well known, acts by constricting splanchnic arterioles and so closing the dilated splanchnic lake. A marked pressor effect results. Indeed, Hoskins has shown that the pressor effect of epinephrin depends entirely on the emptying of this blood lake since, if the splanchnic area is excluded from the circulation, epinephrin no longer is able to produce any pressor effect.

Levy has conclusively proved that the pressor effect of epinephrin is multiplied from 200 to 300 per cent. if thyroid is present, and he has further proved that thyroid has no effect whatever on the vagus. Consequently, it is evident that, as Levy has said, "thyroid secretion renders more excitable the sympathetic structure acted on by epinephrin in raising arterial pressure." It therefore follows that if the blood stream contains an excess of thyroid, less epinephrin will be required for any given pressor effect; or, in other words, the accelerator and other effects of epinephrin will be less evident in these cases, and effort will be accompanied by a smaller degree of tachycardia. We see in this the explanation of the slowing of the pulse we have encountered on thyroid administration.

7. Roger: Quelques recherches récentes les functions de capsules suprarénales, Presse Méd., 1916, **24**, 513.
8. Lewis: Report on Soldier's Heart to Medical Research Committee.

### THE DISEASE IN TRANSITION

We may now proceed to examine more closely the symptoms of the subacute and chronic disease, which symptoms, as we have pointed out, are progressive in character and subject to modification in their progress. Before doing so, however, we should like to insist on this fact of the modification of symptoms because, unless it is borne in mind, cases will be classified wrongly and those seen at one period will be regarded as differing from those seen at earlier or later periods; such differences are merely differences of degree. The disease, like most diseases, is a process rather than a fixed point. Each stage presents its own features. Each stage shades into the succeeding stage. When we speak of the chronic disease, disordered action of the heart, neurasthenia, etc., we by no means wish to imply that we believe the evil process is ended or that cure does not take place. The truth is that sufficient time has not yet elapsed to enable us to say whether the matter ends there, advances to some further phase of disability or gradually dissolves itself in cure. A proportion of cases certainly appear to establish a modus vivendi.

The subacute disease marks the passage from the acute to the chronic disease. The patient at the conclusion of the acute stage is in a condition of lassitude, the result, as we have suggested, of his active vagus. He is content to lie still without doing or thinking, and so remains unaware, in a physical sense, of his condition. During this period the pulse chart and temperature curve both tend to be subnormal. A little later the patient begins to enter once more on the affairs of life. He is now at once aware of the disability under which he labors, that is to say, of the disturbance in his nervous equilibrium occasioned by his hyperexcitable vagus system. In order to compensate for this, the opposing mechanism is called on to make greater efforts. There succeeds a period of rapid heart action, bouts of palpitation, and tendency to sharp relapses into weakness — a period that is of unstable nervous balance in which at one time so-called thyroid symptoms manifest themselves, at other times vagal symptoms.

Clearly, however, this stage is really a reaching out toward a new equilibrium, that is to say, a balance between the overexcited vagus and the sympathetic mechanism which is becoming overexcited also as a compensation. This new balance differs from the old balance of health in one momentous respect — it is a balance between extremes, and the daily swing of rest and activity is therefore greatly exaggerated. Activity becomes restless, nervous, violent; rest becomes heavy, somnolent, deep. The symptoms of so-called disordered action of the heart are produced, and the chronic stage has begun. This passage from the acute to the chronic stage shows four distinct phases: (1) the acute attack; (2) the period of rest following the attack; (3) the period of badly adjusted

nervous balance, etc., and (4) the period of new adjustment of nervous balance — disordered action of the heart.

It is interesting to recall that in the course of a series of investigations into the nature of disordered action of the heart, Fraser and Wilson found that the response of the patients to epinephrin, the drug of the true sympathetic, was much exaggerated, while the response of the patients to apocodein, a drug which inhibits the true sympathetic, was also much exaggerated. This finding is in exact agreement with the expectations we might have entertained from our clinical study of the genesis of disordered action of the heart.

### THE TEMPERATURE CURVE

The normal heat of the body depends on the amount of heat generated and the amount lost. There is a daily swing in health showing a low temperature in the early morning and a higher temperature in the late evening. That this swing is determined to some degree by the interrelationship of the pressor and depressor mechanisms is scarcely doubtful.

We should expect, therefore, that when the new equilibrium of our cases was established — what we call the chronic stage or stage of disordered action of the heart — the daily swing would be of a more exaggerated type in keeping with the exaggerated irritability of the nervous systems concerned in the new balance. This, in point of fact, we find, the daily swing amounting in most instances to 2 degrees Fahrenheit and often extending considerably above and below the normal line.

It must be realized, however, that a spiky relapse of fever often occurs during the chronic stage. In these cases nervous balance stands once more in need of a readjustment, the extent of which will depend on the extent of the disturbance produced in the vagal system.

### THE CLINICAL PICTURE

In the later subacute stage of the disease the patient presents a well defined clinical picture. Throbbing headache is complained of, the face is flushed, the skin warm, profuse sweating occurs, marked tremor is present, and a sense of fulness in the upper chest is complained of. Sometimes constant nausea is felt, and faintness frequently occurs. The patients may faint, and often do so. When the chronic stage or stage of disordered action of the heart has been established, this extreme instability of the nervous system is less well marked. The patients no longer tend to swing from states of great excitement to states of complete collapse. Another and different clinical picture is seen. This clinical picture corresponds to the entity which has acquired the title of "neurasthenia," by some qualified with the words "of vasomotor type." No matter what name may be given to it, it will be found that there occur brisk reflexes, coldness and blueness of the extremities, irritability of temper, inability to fix the attention for long periods, and exhaustion, usually provoked by sustained effort, far in excess of that evoked by the same effort in healthy men. Breathlessness on exertion, palpitation, precordial pain and giddiness are features of both subacute and chronic conditions. .

*(To be continued)*

# PHYSICAL EXAMINATIONS UNDER THE SELECTIVE SERVICE

## MEETINGS OF THE SECTION ON MISCELLANEOUS TOPICS, HELD IN THE STUDEBAKER THEATER, CHICAGO, JUNE 13 AND 14*

*(Continued from page 35)*

### QUESTIONS AND ANSWERS CONCERNING DRAFT REGULATIONS, CONDUCTED BY COL. J. S. EASBY-SMITH

THURSDAY, JUNE 13

LIEUT.-COL. J. S. EASBY-SMITH said:

Question.—What disposition should be made of a registrant who has been suffering from diabetes mellitus?

My opinion is that he ought to be rejected. I think you will find that in the book, but if not, it seems to me you ought to know that a man who has diabetes mellitus will never be fit for general military service.

Question.—Are these rules to be applied to all men of draft age, or only to those who have to be examined hereafter?

Recently the Provost Marshal-General issued a request to boards, through the governors, to go over and recomb their classification lists in order to correct cases that have been improperly classified, because we realize that some have been improperly classified without deliberate fault of the boards. Boards ought also to comb their lists over as to physical groupings. Section 177 provides that when a man is rejected at camp, he shall be reclassified by the Local Board in accordance with the findings of the camp authorities.

In the new Manual you will find short explanatory notes to Section 177, the gist of which is as follows: We are going to try to get the Surgeon-General to issue an instruction which will be followed by camp surgeons, so that when they reject a man and send back Form 1029-A or B, or whatever it is, they will state specifically the physical cause of rejection, if the rejection is due to physical cause.

And then there is another case in which I believe we will get cooperation through the Surgeon-General or Adjutant-General, when the camp surgeon will again put it into the record. Now, suppose the camp surgeon has rejected that man because he finds him suffering with some defect which unfits him for any sort of military service. Put him in Class 5. If he is rejected on account of some defect, he might leave him still in the deferred remediable group, or in Class C for special and limited military service. Put him in that. If you have any doubt about it, examine him over again, and group him; and then bear this in mind: You know the Local Board and the District Board have the authority to reopen, reclassify or reexamine cases at any time they choose. They cannot be compelled to do so. It is absolutely discretionary. You may have a man who is a malingerer. He may come in with some sort of a fixed up case, and it may appear to be from some source that is not what it appears to be. There are a great many rejected. On subsequently learning that he is in good shape, and is working, call him in and examine him and regroup him.

Question.—Has the Advisory Board the same power as Local and District Appeal Boards?

Let me say that the Medical Advisory Board has no power except as the name indicates, to advise. The law puts the decision of these matters in the Local Board, subject to appeal and review by the District Board. The Medical Advisory Board makes the examination for the benefit of

* Because of lack of space some of the questions and answers rather special or non-medical in nature have been omitted from THE JOURNAL but will be included in the reprints. Reprints will be sent by THE JOURNAL on receipt of six cents in stamps.

the Local and District Boards, so that the Local and District Boards may exercise their discretion and judgment on the advice received from the Medical Advisory Board. If the Advisory Board thinks a man ought to be called in and reexamined by the Local Board, and so recommends, I think the Local Board would be very derelict in its duty if it did not comply with the request. You can reexamine and reclassify this man according to Section 177.

Question.—Mr. T. H. McKELLAR, Los Angeles, asked: Why should we not accept for limited service a man with one leg, or a man with one arm, because under the construction that was put on it for that individual, if he were able to do an honest day's work in a successful and skilful manner, earning his living without losing any time more than a man ordinarily in his vocation, and receiving full pay, or if he were a skilful man earning from $5 to $10 a day in a munitions factory, that man was qualified for special and limited service under the orders sent out. Is there no place in the limited military service for a man like this?

LIEUT.-COL. J. S. EASBY-SMITH answered: I can only say this: That the Surgeon-General, bearing in mind the old Army regulations, has provided these standards for physical acceptance or rejection. I am not prepared to argue whether or not a man with one leg or one arm ought to be held for special or limited military service. That is for the Surgeon-General and the medical authorities of the Army to settle. I will say that the only way to get uniformity is to adopt a standard rule, so that there will be uniform action on the part of the boards and the camp surgeons as to rejections and acceptances, and if the boards will live up to them, and the camp surgeons will live up to them, there will be few men for whom the government will have to pay double transportation.

Question.—Is a man of the age of 61 over the age for original entry into the Medical Reserve Corps?

I think he is not eligible.

Question.—In what occupations may men be held for special and limited service in the Army?

A good many of these questions are answered practically in the questionnaire for the new 21 year old men recently registered. It will be slightly different from the old questionnaire, because in it the additional questions occur as to the divinity and medical students. Hereafter not only men who are divinity students but also medical students at that time will be entitled to absolute exception. We have taken out page 4, reduced the number of questions, and inserted a removable slip which is to be put in, a temporary slip, which contains a list of about 400 occupations needed in the Army.

Question.—How about having the defect of registrant removed.

You cannot compel a registrant before being inducted into the Army to submit to having his defect remedied. You can compel him to submit to an examination, but you cannot compel him to submit to an operation to be remedied.

Question.—What about reclassification after physical defects have been removed by an operation?

If the operation is successful, the registrant can be reclassified. It may take two or three months before he is physically fit again, but if he is, he can go right into Group A, and is physically fit for general military service.

Question.—Can a malingerer be sent to a hospital for observation, and can he be compelled to stay at such a place?

I think that this may be done whenever a board decides that it is necessary, in order to secure a complete examination of a registrant and get the truth about him, that he be sent to a hospital and remain several days under observation. Of course, you could not compel him to pay the expense, but I should say you had a perfect right to compel him to submit to any reasonable examination.

Question.—Could we compel a registrant, irrespective of his social condition, to go into the Cook County Hospital, a charitable institution?

I will say that if Cook County Hospital is willing to hold him for observation, I think you can compel him to go there. I think the only limitation that would be applied would be as to whether or not it was reasonable, and whether or not it was reasonably necessary to hold the man under observation in order to ascertain his real physical qualifications.

Question.—Do we differentiate between congenital flatfoot and broken arch?

MAJOR HUBERT WORK answered: The term "flatfoot" bears particular reference to the flexibility and weight-bearing power of the foot, and not to the height of the arch.

Adjourned until 8:30 a. m., Friday, June 14.

## FRIDAY, JUNE 14

Question.—Are dental students placed on the same status as medical students under the recent law?

This recent law registering the new 21-year-old men provides that any registrants who were medical students, recognized medical students preparing for the practice of medicine and surgery, shall be exempted, that is, those who had that status at the time the new law was passed. In a sense, the practice of dentistry is the practice of surgery. I do not know whether that question has been put up to the Surgeon-General's Office. I am sure that it has not been put up to our office yet, as to whether or not dental students are to be exempted, as well as medical students, and I should not like to express anything like an official opinion, because the question has not really been put up to the proper authority. My present view of the matter, however, is that, taking into consideration what the past law requires, dental students are not included in the provisions that apply to medical students proper, who are medical students in medical schools preparing for the practice of medicine and surgery. I do not believe that the dentist complies with all of the terms of that distinction.

Question.—Does the Provost Marshal-General advise Local Board medical members to go into regular service?

We have no authority to advise one way or the other. The attitude of the Provost Marshal-General's Office is this: If the Surgeon-General says that he needs more medical men in the Army, he ought to be able to get them; but if there is a community—and there are numerous communities in the United States, because the question has been put up to us frequently—that cannot spare the medical member of its board, because there is no other medical man available, I should say in that case that the man's first duty is to stay with the board, because without him the proper physical examinations, an essential part of the examination of a registrant, cannot be conducted, and there cannot be any real physical examination. In other cases this is a question for the member to decide for himself; but we have repeatedly authorized the governors to accept the resignations of local board members in order that they may accept commissions in the Medical Reserve Corps of the Army. That expresses our attitude; and it is only in the cases in which there is no other medical man to take his place that we feel he ought not to leave.

Question.—Suppose a man is inducted into service as physically fit, and at camp a defect, hernia, for example, is found; does he have to submit to an operation in camp or is he returned home?

If the camp has facilities for performing the operation, and the division surgeon feels that by undergoing the operation the man can soon be made fit for service, he will have to submit to the operation. If there are not facilities at camp for remedying that defect, or if, in the opinion of the camp surgeon, the operation would be such that the man would be laid up two or three or six months before he is really fit for active military service, it is for the division surgeon to say whether he will be operated on or sent back home. The law on the subject is, or one of the articles of war that govern the man after he is inducted into the service is, I think, that he must submit to any operation that is not "capital." Now, what is a capital operation and what is not a capital operation is, as you know, rather a debatable question.

Question.—Is it desired that a medical advisory board ever render a report more complete than is called for in the blank provided for questions and answers?

I should say yes; that if in the examination of a man something develops, and there is no space or room on Form 1010 for the recording of it, it should be recorded on a separate sheet and attached to the form; because the more information one has about a man, the more intelligently his case can be acted upon.

DR. WHITE: Do you make three copies?

COLONEL EASBY-SMITH: Yes, make an original and two copies, two carbon copies, and attach them.

Question.—DR. RALPH C. MATSON, division tuberculosis specialist, Ninety-First Division, Camp Lewis, Wis., asks, "What provisions have been made to prevent the return of tuberculosis patients rejected at camp, when the local or medical advisory boards think no tuberculosis exists?

I have explained already that under Section 177 of the regulations, when a man is rejected at camp he has to be reclassified by the local board in accordance with the finding of the camp officials. Now, since that section was written, these new regulations were issued, and in order to make that clear, so that it can be applied in the light of the new physical

examination regulations, we put four important notes under Section 177, where it is printed on page 65 of the new standards. Of course, these standards consist, as you know, of the medical regulations proper; and there has been added as an appendix the essential parts of the selective service regulations relating to matters of procedure, in order that everybody may have them in handy form, the essential parts of the regulations governing the procedure.

Section 177 provides as follows:

When any selected man is rejected at a military camp or station, the commanding officer thereof will promptly notify his local board of the fact, specific cause and date of rejection, using Form 1029-A, and the Provost Marshal-General using Form 1029-B. When any selected man is, subsequent to acceptance, discharged at a military camp or station, the commanding officer thereof shall similarly notify the local board (Form 1029-C) and the Provost Marshal-General (Form 1029-D).

If the rejection or discharge is on account of the fact that the registrant is an alien, or an alien enemy, or upon the request of the accredited diplomatic representative of the country of which the registrant is a citizen, or that he is physically disqualified for general military service, the local board shall place the registrant forthwith in Class 5. If the discharge or rejection is on account of dependency or any other cause for deferred classification prescribed by these regulations, the local board shall proceed to reclassify the registrant in accordance with his status, as determined by the action of the military authorities in discharging him.

Now, that may need a little explanation. You will notice that that recognizes the possibility of a man's being rejected at camp, not only on account of physical disqualifications, but, having been accepted at camp, discharged on one ground or another apart from the question of physical qualification. The power to discharge any man from the Army, whether he be an enlisted man or a drafted man, is plenary in the President of the United States. He can discharge from the Army any man that he chooses. That function is exercised through the Adjutant-General, but practically it is exercised through camp commanders. So that sometimes a man has been accepted at camp and becomes a soldier; but an application is made for his discharge from the Army on the ground of dependency, or on the ground of necessary industrial occupation, or some other ground or because he is an alien enemy; or because—and we have had a great deal of trouble of this sort—we have had treaties with some country, for example, Switzerland, in which we agree that we will never put into our Army any of their citizens.

Application may be made to the Adjutant-General that a man be discharged on account of dependency. Earlier in the game there was a good deal of abuse—and I use the word not as reflecting on the camp officials—but there was a good deal of abuse in the authority of the camp commander to recommend the discharge of a man. In other words, the local board, or the district board may have passed on this very question of dependency, looked into it carefully, and found out that the man's claim was not established, and held him for service and sent him to camp. Sometimes he would go to camp and make an application, and some of these associations who are doing good work, but who sometimes are carried by their sympathies beyond what they ought to do, urged the camp commanders, through their associations, to discharge the man, saying, "This poor fellow has a wife and three children that are starving to death"; and the camp authorities will recommend his discharge to the Adjutant-General and he will be discharged; and ninety-nine times out of a hundred he ought not to be discharged. In some cases we found that a man had abandoned his wife and children and left them for two years, and yet he induced some of these associations to come in and beg for him, and they discharged him.

That is being corrected largely, because those abuses have been called to the attention of the camp commanders, and the general rule is now that before a camp commander will recommend the discharge from the Army of any man, they will refer that case back to the Local or District Board for recommendation. So that, while there is the absolute power to discharge from the Army, it is going to be exercised on the discretion of the Local and District Board. In other words, reclassify the man according to the grounds found by the camp authorities.

When it comes down to the matter of rejection for physical qualifications: when this section was written, we only examined men and divided them into two classes, those fit for military service and those unfit for military service. Now, we have the four groups; so that these notes in fine print on page 65 explain and amplify this Section 177 as follows:

Note 1. Section 177 is necessarily modified by the new grouping, also by new standards of physical examination, and should be applied in connection with Sections 116, 117, 118 and 120, of the Selective Service Regulations.

These particular regulations are the regulations authorizing boards to reexamine a man at any time, when the board thinks a man ought to be reexamined, whether reexamined as to his availability for duty, or reexamined on any claim that he may have for deferred classification; and it also covers the reexamination of a man physically, because, you know a man's physical status may change as well as his other status. And those sections give unlimited authority in discretion to Local Boards to reopen and reexamine a man's case.

Note 2. When the form 1029-C shows that the reason for the discharge of the registrant was physical disqualifications, which, under the new physical examination requirements, unfit him for any military service, the Local Board, under Section 177, shall place the registrant forthwith in Class V.

Now, having done that, there is nothing to prevent the board in the future, if it thinks that man may have recovered, to call him up for reexamination, and if they find him cured of that defect, reclassify him or regroup him.

Note 3. Where Form 1029-C shows grounds for discharge to be physical disqualification for general military service, but defects which might place him in the deferred remediable group, or leave him fit for special or limited military service, the Local Board should proceed to reclassify the registrant in accordance therewith, and if he is placed in Class 1, the board should proceed to examine the registrant under the new standards of physical examination and to classify such registrants in accordance with such physical examination.

Note 4. Local Boards are authorized under Sections 116, 117, 118 and 120, on their own motion, to reclassify registrants. Local Boards should keep advised with respect to any change in the physical conditions of discharged registrants which removes the physical disability, and have full authority if a change of status of this nature occurs, to reclassify the registrant, placing him in Class I, and order that he be reexamined.

That note will answer thousands of questions that we have had which have naturally arisen on account of the new standards.

DR. OWEN: It reads, "Exempt from further military service." Now, can we touch those men again, whom we have discharged?

COLONEL EASBY-SMITH: When were they discharged?

DR. OWEN: Last fall.

COLONEL EASBY-SMITH: Yes, sir. They should be reexamined under the new regulations, as if they had never been to camp at all. This Section 177 relates only to registrants or drafted men who are rejected from camp after Dec. 15, 1917. A man discharged from camp prior to Dec. 15, 1917, should be reexamined, and the Local Boards have the right, as we have seen, to reexamine the men who are now discharged; but the medical aides and the members of boards ought to be extremely careful to see that a man is not sent back to camp.

Question.—DR. MATSON, division tuberculosis specialist, Ninety-First Division, Camp Lewis, Wis., asks: If a board sends a registrant to camp as phyically fit, and the examining surgeon and the authorities at the camp decide that the man is suffering with tuberculosis and rejects him and sends him back, what is the action of the Local Board?

The Local Board ought not to be stubborn, and in fact it would be violating the regulations, if it should insist on its decision being followed, and turned around and sent that man back to camp, because he is going to be thrown out again as soon as he gets back there. Of course, there may be a case in which a man has had incipient tuberculosis, he may have shown the germ in his sputum, and be rejected at camp, and later it may clear up. In that case it is for the board to exercise its authority of reexamining that man, and if it is perfectly sure that he has recovered, there is no reason why he should not be sent back; but a board ought not to send a man back to camp because it does not find the particular physical defect that the camp surgeons say they have found; because it is for the camp surgeons to say whether or not they will take him into the Army as physically fit.

Question.—A young man, aged 20, enlisted in the Navy; he was there a few months and came home; he says he was discharged because he carried meningitis germs in his throat. He registered, June 5, 1918. He has lived in a town of 5,000 all his life. No cases of meningitis resulted from him, either before he went to the Navy or after his return. Local and Medical Advisory Boards are not prepared to make cultures of the throat. Shall he be rejected on his word that he is a germ carrier or be sent to camp? He is otherwise physically fit.

First, you should not take the word of any man that he is a germ carrier. If you take a man's word for that, and do not have the facilities to take cultures, why, you probably would have to let a good many hundred thousand men out. I should say, however, that when a board is put on any sort of notice that a man possibly is a meningitis carrier, he ought to be given the most careful examination, because that is one of the worst diseases that can be taken into camp. I am surprised

that the Medical Advisory Board is not prepared to make cultures. I would send him to another Medical Advisory Board, and certainly some man on the Medical Advisory Board is qualified to take a specimen and send it to a hospital or have it cultivated and examined; and I should say there is nothing in this case at all to take it out of the ordinary case. The fact that he was in the Navy has nothing to do with examining him now; but, having been put on notice that he is possibly a meningitis carrier, the board ought to exercise great care in ascertaining whether he is or not.

Question.—Dr. Johnston, Wyoming, asks: What is the status of Filipinos in this country?

Their status is that of aliens. A Filipino is not a citizen, unless he has become naturalized. If a Filipino is residing in this country at the time of registration, he is obliged to register as every other man of draft age. If he has declared his intention to become an American citizen, he is liable to draft as any other declarant. If he has not declared his intention, he is entitled to claim exemption as an alien, and it must be granted to him, unless he waives it. In other words, the draft law is not applicable in the Philippines at all; and, if a Filipino is here, he is treated as an alien, just like our Indians. We have two classes of Indians, the citizen Indian and the noncitizen Indian. The citizen Indian is liable to military duty and liable to all the provisions of the selective service law; the noncitizen Indian occupies the same status as an alien, and cannot be drafted, unless he waives.

Question.—What is meant by "for insular troops?"

We do not know whether or not our drafted men are to be used outside the Hawaiian Islands. Recently the Provost Marshal-General gave us authority to waive all height and weight standards in the case of Orientals otherwise fit for full military duty.

I should say further, answering that, that this new regulation extended to all men raised in Hawaii and Porto Rico; that is, that the height and weight minimums are practically waived for men raised in the two islands Hawaii and Porto Rico.

I have not any authority to state officially what is going to be done with the troops raised in the two islands. I know that the policy has been—although it may be changed at any minute—to raise troops in those two islands, and to let them remain on duty in the islands, taking the place of the regulars who are there, so that the regulars can be called and go into service, and go overseas; and the troops who are drafted in the two islands shall stay at home taking their places. It may be that the policy will be changed and the Hawaiian troops and the Porto Rican troops put into the same service as the troops that are raised elsewhere; but I should say that the proper interpretation of this, that the height and weight minimums are waived, applies as to men drafted in either Hawaii or Porto Rico.

Question.—Under instructions, Form 75, will local boards classify in Groups B and C without recommendation of Medical Advisory Boards?

They can in clear cases. When they are doubtful they ought to send them to the Medical Advisory Boards.

Question.—When will old instructions be recalled?

We began last Monday the shipping out and distribution of the new instructions. We shipped 25,000 on Monday to the far western states, because we always begin to ship to the more distant points first, and by this time Form 75 will have been shipped to every state headquarters in the United States, and to the territories, and the distribution has probably begun already. We have given positive instructions to the Adjutant-Generals for transmittal to boards immediately on receipt of Form 75, and that old Form 64 shall be totally destroyed; not merely abandoned, but absolutely destroyed. These instructions will go into effect on their receipt, and they are being given to the camp commanders and the Adjutant-General, so that they will go into effect at the camps at the same time.

I would not examine those men that are going now, under these regulations, because the camp surgeons have not received them yet. I doubt whether your board has received them. That is another case for judgment. When you do get these new regulations and read them over, if you happen to know of some man that you ought not to have held for general military service, you ought to reexamine him and regroup him under the new regulations.

As I said this morning to the medical aides, we could write reams and reams of regulations that could cover thousands of pages, and it is beyond the range of human possibility to provide for every question that is going to arise in the application of a law like this, that has such widespread application. There is only one thing to do, and that is to give men an outline of a course of procedure to follow. Appoint the right men to do the job, point out the objective to them, and let them go to that objective, using their good horse sense and sound jugdment, following the general regulations that have been compiled. That has been done by the boards of this country; and I do not hesitate to say that if there is one single thing that has reached a greater state of perfection in its administration than anything else since war was declared, it is the administration of this Selective Service Law. This is due, not so much to our office as to you men in the field who have been administering the law and applying these regulations.

Question.—Dr. Brown, Milwaukee, said: The difficulty is that while these boards have been doing yeoman service, they find themselves confronted with men returned to them from the camp, reported back with hernias that they have not, and never did have, and where the services of elderly men in the medical profession is made as nothing by some young chap in camp who wears a uniform and decides absolutely against the facts in regard to some cases.

Unfortunately, that is one of the difficulties we have had. The trouble has been in the past largely on account of the fact that the camp surgeons were acting under one set of instructions and the boards under another. But there is no excuse for the cases you mention, when a man is rejected on account of hernia, and it is a matter of physical demonstration that he has not hernia. Now, the thing to do in those cases is to put it up to the medical aide, and let him take it up with the camp surgeon or the division surgeon and say, "Here is a man sent back, rejected at camp, of whom they say he has hernia, and here is a physical demonstration that he has not." Put it up to him. Is it crookedness or incompetence? If it is crookedness root out the rotten spot; if it is incompetence, put some one there that is competent. I think in this way, more than in anything else, the medical aides henceforward can be effective by being the go-between, or the means of communication between the boards and the camps, so that these abuses can be pointed out on both sides. Boards commit errors, and camp surgeons commit errors. Now, let us all bend our efforts toward correcting these errors and reducing them to a minimum. I think that if this meeting will accomplish a small percentage of this, it will be worth while.

Question.—Dr. Throckmorton asks: Which examination shall stand, if a registrant is examined by a Local Board and pronounced fit for service, and he goes to the Medical Advisory Board and receives a recommendation for exemption, that he is unqualified; which examination shall stand?

I can answer that this way: The Medical Advisory Board has no right to determine the physical qualifications of a registrant. Only two bodies have that; in the first instance the Local Board, and in the second instance, if the man takes an appeal, the District Board. I am not talking about what happens when he gets to camp. The Advisory Board is what the name indicates; it is to advise the Local Board.

If I was on a board and the physician member of the board reported that he had examined a man and found him physically fit, and the man went to the Medical Advisory Board, composed of a number of physicians and they sent him back to the Local Board with their report saying, "We found so and so, etc.," I should be much inclined to take the opinion of several men who find something that the first man simply failed to find, rather than to take the opinion of the one man. It reduces itself, however, after all, to the exercise of common sense and good judgment.

Question.—Dr. Throckmorton asked: Can the man examined go alone, without the recommendation of the board?

The man can go to the Medical Advisory Board in two ways: first, if he is not satisfied; supposing he is examined and the physician of the Local Board tells him, "You are physically fit," and he says, "I am not satisfied." Then he has the right to go to the Medical Advisory Board. He has to pay his own expenses, take his case to the Medical Advisory Board, and the Medical Advisory Board reports back to you. You are not bound by that.

Question.—Dr. Throckmorton asked: In that case the local physician certifies on his examination paper for him to go there, or is he going on his own responsibility?

The only difference is that he can be sent by the Local Board if it is in doubt, and there the government pays his expenses. If the Local Board is not in doubt; if the Local Board by a vote of 2 to 1 has held that man for service, or rejected him, then he has to take the appeal himself, or rather he has to go there of his own accord and pay his own expenses.

Question.—Give the rule that allows a Local Board to reopen cases.

If you will refer to the Selective Service Regulations themselves, and to the index of the various sections, you will find that the Local and District Boards have absolute and unlimited discretionary power to reopen cases whenever they choose; and their action in reopening or refusing to reopen a case is not appealable. Their action is final.

Question.—Is it necessary for the oculist to examine a man sent up for hernia?

I should say when a man is sent up by the Local Board, and Form 1010 says that his eyes have been examined before, and that his eyes show 20/20 in the left and 10/20 in the right eye, or whatever it is, there is no reason why the oculist should duplicate that work, when he is sent up there simply to have one question determined concerning which the Local Board is in doubt.

Question.—DR. L. BLOCH asked: In the case of a man sent up from the Local Board, is it necessary to go through a complete examination at the head, and taking every part of him, after the Advisory Board has examined him? When some defect is found that disqualifies him, is it necessary to examine him further?

The new regulations are very much simpler in a great many instances than the old regulations, and a good many of the inconsistencies of the old regulations have been eliminated. In the first place, it would be perfectly useless for either the Local or Medical Advisory Board to go through the entire examination of a man after it had found a decided defect which would totally disqualify him for military service. It is simply a loss of work. So that either board, when it finds a defect which totally disqualifies a man, should go no further. Now, then, in the case of men who were sent up to the Medical Advisory Board, I should say that the character and the extent of the examination depends entirely on the man's examination as indicated on Form 1010, and also concerning the particular question of doubt which is referred up to the board. And even in that case, in some cases it is undoubtedly necessary to go over the man and make a complete examination of him. In other cases, I should say that the examination might be very limited. That is a matter for the sound discretion of the board, which it has to determine in each case. You cannot make a hard and fast rule that will govern every class of cases.

Question.—DR. BROWN, Milwaukee, asked: It has been found in many instances in the Advisory Boards that men coming from the Local Boards have eye defects not discovered in the Local Boards. If the men on the Advisory Boards do not make an examination of the eyes, how are those faults in vision not found by the Local Board to be discovered?

We are going to have mistakes made, and in some cases men on the Local Boards not doing their duty; but the regulations suppose that men will do their duty. If a man on the Local Board has missed something, and he actually marks down a man's vision as normal, I think the Medical Advisory Board can assume that he has made the examination and found what he reports. If the Medical Advisory Board finds that the Local Boards are sending men up with false reports on Form 1010 they ought to take some action to see that it is corrected. But I should say that if Form 1010 comes in blank as to the examination of the eye, you ought to examine the eyes. If Form 1010 says that a man's eyes are 20/20 and there is nothing that would call your attention to any defect, I see no reason why the Medical Advisory Board should pay any attention to his eyesight. But if Form 1010, as it comes up, shows that there is probably a defect, or if an ocular infection shows that there is some defect, I should say that it was the duty of the Advisory Board to look into his eyes.

Question.—Is it not a good safe plan, and the proper thing, for every Local Board to have an oculist on it to examine men for their eyes? I have been calling in an oculist to examine men whom I would certainly have passed, and they have been found to have defective eyes, and they would have been passed but for the work of the oculist. It is very satisfactory, and we do not let anybody get by us in that way.

We have encouraged that all we could. We have encouraged the Local Boards to ask the dentists to come in and help them to examine the men's teeth; and to have the various specialists, and the oculists and so on, come in. We sent out special instructions not long ago recommending that Local Boards should take advantage of the assistance of dentists in examining the men's teeth.

Question.—Does this order "Work or Fight" apply only to Class 1, or to all classes?

It applies to Classes 1, 2, 3 and 4, but not to Class 5. It applies to Class 1 in this way; Suppose a man has a very low order number, and he is away down at the bottom of the list, and he is a loafer. Under that the Local Board has the authority to cancel his order number and put him right at the head of the list, and send him right to camp. That is the way it applies to Class 1.

Now, as to Classes 2, 3 and 4: It can transfer a man from any one of those classes into Class 1 and send him along with his order number, and also revoke his order number if he has a low order number. It does not apply to Class 5, because that is made up of men who are compelled practically to be exempted by the terms of the law; but it does apply to Classes 2, 3 and 4, as well as Class 1.

Question.—Can a man be transferred from Class 4 to Class 1, without being taken back to the District Board?

If you will read the new work or fight regulations, you will find that they will cover it. If a man has a wife and two children, is slinging dishes in a restaurant, and would rather do that than some more productive occupation, you can put him in Class 1, and the law compels him to send his wife $15 a month. The government will add $35 a month, and that wife and child will get $50 a month, and you say to him, "Get into the Army." If before it goes into effect he abandons the slinging of dishes and takes up something more effective, something which an older man or woman cannot do, then all right; leave him where he is.

Question.—DR. P. R. BADGER, Local Board, Kankakee, Ill., asks: Does not the government realize the necessity of sending an Army officer with drafted men from the place of entrainment to the cantonment, in order to maintain proper conduct?

Of course, the regulations provide, as you know, that there should be a leader accompanying them, and the regulations further provide that if the members of the board feel that on account of the size of the party, and on account of danger of disturbances that some one should go with them, they may apply to the company commander to send military police to help them out.

We wrote a lengthy and full recommendation to the Adjutant-General, asking him that the regulations be put into effect whereby the camp commanders would instantly, on the request of the Adjutant-General of the state, furnish such military police as an escort as might be necessary, so that when the Local Board feels that it needs some sort of escort, it can telegraph to the Adjutant-General, who can ask the camp commander to furnish it. I hope there will be some permanent regulation in that matter, because undoubtedly there is need for it. But I would simply say to boards now that under the regulations as they exist you have the authority, when you feel it is necessary, to send along people to preserve order.

Question.—Should a man with one eye enucleated be sent in limited service?

I think the new regulations say that a man who is totally blind in one eye, but his sight is normal in the other, can be put in special military service. Nonprofessionally I cannot see the difference between a man who has one eye cut out, and a glass eye in there, with the sight in the other eye perfect, and the man who has simply lost the sight of one eye. Major Work, what do you say about a man whose vision is totally destroyed in one eye, but who has good vision in the other eye, and can be held for special limited military service; now, suppose he has actually lost the eyeball and has a glass eye. Is there any difference in those cases?

MAJOR WORK: He is blind in the eye just the same, but has one good eye. The eye is lost, whether the ball is lost or not; that is immaterial. It is the vision we are interested in.

Question.—LIEUTENANT DOBSON, Mississippi, asks: What recommendation shall the medical aide make in cases in which the examining physician on the Local Board lives distant from the headquarters of the board, thereby impairing the efficiency of the Local Board?

I should say that I would try to get a nearby physician, a man who is more available, and suggest to the governor that he recommend the substitution. The President makes the appointment, but we almost invariably follow the recommendation of the governor. I would recommend to the governor that this man be asked to resign, and that a nearby and more available man be appointed, if there is one.

Question.—DR. D. CHESTER BROWN asks: From statement it appears that all medical aides do not give all their time. Are they expected to?

They are expected to give all the time that may be necessary to perform the duties which have been placed on them when they accepted commissions. They have been sworn into the Army, and they are expected to devote their entire time to the work, if all their time is necessary to the proper performance of the duties assigned to them.

Question.—What shall we do with men who are physically fit for limited military service only, who are not specially capable for any special work, such as common laborers or farm workers?

The only thing you can do in that case is to find them fit for special limited military service, in whatever capacity you find that they are fit to work in.

Question.—Dr. Herrick, Chicago, asks: Can the Local Board deny to the registrant an examination by the Medical Advisory Board when he makes application in proper manner and at the proper time?

I should say that any Local Board would not be obeying the regulations, if it refused to send a man to a Medical Advisory Board, if he properly requested.

Question.—Even though the Local Board unanimously decides there is no reasonable doubt as to a man's fitness, does not such denial of the right of a second examination violate the spirit of the law?

Yes. And there has been some confusion on account of what are apparently inconsistent statements in, I think, Sections 122, 123 and 124. I should say that, notwithstanding the Local Board unanimously decides that a man is fit for military service, and that he has no defect, if he has made a request in due season to be sent to the Medical Advisory Board, he has the right to be sent there, and the Local Board ought to send him; and if the boards are acting to the contrary, they are acting in violation of the regulations.

Dr. Herrick: I asked that question, because some of the Local Boards have sent to the District Boards, on appeal made by the registrant, cases in which they had refused the registrant the right to appeal to the Medical Advisory Board. I note that you explain there that there is a little confusion in the wording of Section 123, and that explains it all. It clearly seems to me that the intent of the Selective Service Law is to give the man an opportunity of going before the Medical Advisory Board.

Colonel Easby-Smith: Absolutely, if he wants to, the Local Board has no right to deny it.

Dr. Herrick: And it is assumed in Section 126, in the note, that the registrant appealing the result of his examination has already been twice examined.

Colonel Easby-Smith: Yes. It is clearly the intent of the regulations to give the registrant an absolute right to go before the Medical Advisory Board if he wants to; and I hope that the medical aides will take all means to correct the erroneous application of the regulations, wherever they find it exists, and if they find it to take the situation up and report the matter to the Adjutant-General, so that he may issue instructions to the board, requiring it to live up to the regulations. That question no doubt arises in reading Section 123, or 124, or whatever it is, and you will observe that it really is directed to one class of cases, the doubtful cases, and does not apply to the preceding section, which gives the man the right to go up.

Question.—On what grounds can a member of a Local Board be excused from further duties?

It is almost impossible to answer that question. We feel that all boards have practically been drafted for the service, and should continue to perform their duty as long as they can do it without an undue sacrifice or without undue hardship; but if the time comes when a member of a Local Board feels that he cannot, in justice to himself or his family, continue to give all the time that is necessary, and somebody else in the community ought to do the work, why, put the matter up to the governor, so that the governor will recommend to the President that his resignation be accepted.

Dr. Hockman: Supposing he is ill?

Colonel Easby-Smith: If a man is ill, he ought to resign and inform the governor that he cannot proceed further with the work on account of illness; in which case I have no doubt that the governor would send a recommendation to appoint a successor.

Question.—Dr. H. L. Adams, Grundy Center, Iowa, asks: How about a Chinaman born in this country? Is he to be taken for military service?

Yes. A Chinaman born in this country is a citizen of the United States. He is liable to military service. Of course, we do not naturalize Chinamen, so that they are aliens; but Chinamen and Japanese, or persons of any other nationality born here are citizens.

Question.—Please discuss the dependency of physicians in the draft age: Are we to consider the possibility of their salary, if they are enlisted in the Medical Reserve Corps, or are we to consider only the $30 a month of the man in the regular service?

You mean the case of a physician in the draft age who is a registrant and who has dependents. No, you are considering his case not from the standpoint of a man that is to be commissioned in the Medical Reserve Corps; you are considering him as a man, a drafted man who will get $30 a month, and that the government will allow $15, and add to it $15 for the wife. You cannot consider the probability that a medical man who is drafted is going to get a commission. I think you would have to treat him as you would any other registrant, from that standpoint.

Question.—I had a question that came up before our board, the case of a man in the draft who had applied previously for a commission in the Medical Reserve Corps. He was rejected owing to defective vision. I simply marked him disqualified on account of his having been rejected in the Medical Reserve Corps.

You were wrong for the reason that in examining men for commissions in the Army the regulations look for a man practically 100 per cent perfect. The old regulations under which voluntary enlistments were made in the Regular Army, and so forth, under which they were examined, looked for men practically perfect, and the fact that a man, on examination, was rejected for a commission does not mean at all that he would not come well within the standards for acceptance into the Army as an enlisted man or a drafted man.

Take a man who passed the examination for a commission: He is put through a very stringent color blind test. As I understand it, in enlisting a man, and in drafting a man into camp, his vision is examined, but not for color blindness. Now, a man might be perfect physically and have good vision, and he might be color blind. On the other hand, there might be some other little defect which a man would have which would cause him to be rejected for a commission, but which would not have any effect on his qualifications as a drafted man. I do not think, therefore, that a board ought to pay the slightest attention to the fact that a man has been rejected either for enlistment or for a commission, when he has tried to get a commission and tried for voluntary enlistment in some branch of the service and has been rejected because of the different standards which are applied; and those different standards will continue to be applied, so far as the physical examination of officers is concerned.

Question.—How long a time has a man to accept a commission? What is the result if he does not accept? Can he resign?

If a man is offered a commission, he does not become a commissioned officer until he does two things: formally and in writing accept a commission and then take the oath of office. The President might send to the Adjutant-General the commission, but you are not a commissioned officer until you accept and take the oath of office. Whether the appointment is revoked for failure to accept within a certain time I do not know. That is a matter of regulation for the Adjutant-General.

Dr. Coburn: Is the certified commission issued prior to the time of the oath, or afterward?

Colonel Easby-Smith: Frequently the commission is issued, but it does not become effective, and a man does not acquire military status until he accepts it and actually takes the oath. I have known of a commission's being issued, and the man's taking the oath and accepting it several months later. Of course his entry into the service dates from the time of the oath of office, not from the date of the commission.

Question.—Could not the department get out a chart of physical standards, etc., similar to the one published by California?

I am glad that question was asked, because I intended to state that Major Work is now preparing a chart which can be issued, and which has been found of great assistance. They were issued by several of the states, and those that have been issued will now not be altogether accurate, under the new standards. So we expect to get out one of these big charts, and publish it for distribution, because the judgment is that where they have been used they have been of very great service.

Question.—What is the status of a student who has just completed his premedical course, but has not entered medical college as yet?

Under the exemption act it is no claim for exemption at all. We have under discussion with the Surgeon-General's Office a request for the adoption of some regulations which will permit the Surgeon-General's Office to protect certain classes of premedical students, by allowing them to enlist in the medical enlistment reserve corps. You remember that we protected medical students heretofore by permitting them to enlist in the medical enlisted reserve corps and remain in that on inactive duty, so long as they were completing their course, with the understanding that when that occurred they

would be ordered into active service in the Medical Corps. We shall probably adopt some method of that sort to protect the necessary premedical students, because the supply of physicians is really becoming very limited, and we shall have to look after that supply. It is just as important to protect the premedical students as the medical students themselves. I think some plan will be adopted which will enable them to be protected.

Question.—Did you state that it was contemplated issuing new physical examination papers, blanks?

Yes. We are anticipating revising Form 1010.

Question.—Is it contemplated to introduce any questions there in regard to the mental condition of the registrant?

I do not know. Major Work could speak on that. I might say here that if any of the medical aides, any members of the Local Boards, any medical members of the Local Boards or Medical Advisory Boards have any suggestions looking to the improvement of Form 1010, that is, the blank for reports of physical examination, we would be delighted to have all of you send them in. Do not delay by sending it through the Adjutant-General of the state. If you have any suggestion to make of an improvement in Form 1010, send it to the Provost Marshal-General. It will come to Major Work, and we will consider all of the different suggestions in making up these contemplated changes.

Question.—Should a man 57 inches in height already called for limited military service be inducted?

I think not. Of course, he has not been called yet. He is in Class 1 and has been put in Group C. But I think these regulations ought to be applied to men hereafter to be inducted. So I should say that a man who is 57 inches in height, if he comes within the standard in which you are required to put him in Group D, then do not induct him.

Question.—Why is not a registrant under 63 inches in height not to be used for special or limited service?

I think he can be, unless he has the other defects already mentioned in the same clause. I think the one defect of underheight does not necessarily reject him unless he has the other defects mentioned in the same clause. Suppose he has that one single defect and has not any of the others; then he might be put into a special military, limited military service.

Question.—Would it not explain that on the third line of page 25 if that "all" should read "general military service"?

Of course, a lot of apparent inconsistencies and things that are not clear are going to interfere from time to time. If it is necessary to issue some instructions to amplify that or clear it up, it will be done. I shall have a note made of that.

Question.—If a man in the draft age, Class 1, volunteers for some special service in the Army or Navy and is rejected, should the Local Board later induct this man into camp?

That should not have any effect on his subsequent standing with the board. They should examine him, and if he comes under our standards, hold him. The fact that he has been rejected previously is not binding on the board.

Question.—DR. O. H. BRUEGEL, East Lansing, Michigan, asks: If a man is referred to a Medical Advisory Board from a distant Local Board for first examination, and the Medical Advisory Board finds that he has an acute condition from which he may recover, has the Medical Advisory Board the right to ask him to return for a later examination, or should he be referred back to his Local Board?

Of course you know that several months ago transfer of physical examination used to be made from a Local Board to the Medical Advisory Board in the other jurisdictions. We have changed that, so that the transfer is now made from a Local Board to a Local Board. In that case the Medical Advisory Board ought to send to the nearest Local Board, and in either case I should say that the Local Board or Medical Advisory Board having jurisdiction of the physical examination of the registrant has the right, under the regulations, to require him to return later, if he is suffering from a temporary condition. As to whether or not he should come before them, or go to some other board, that depends on what the reasons are for him to be transferred to another board.

Question.—What would be the action of the Local Board in the case of a physician within the draft age, who applied for a commission shortly before he was to entrain, but did not have the commission before entrainment? He was honorably discharged for physical disability from the Medical Reserve Corps after two months' service.

The regulations say that a man may be commissioned in the Army, Navy or Marine Corps at any time, regardless of his class. If a registrant has been commissioned in the Medical Reserve Corps, and subsequently honorably discharged on account of a physical defect, and he returns back, he is treated just as if he had never been in the service; I would disregard his honorable discharge on account of the physical disability, because it might be a physical disability which would not permit his retention as a commissioned officer, and yet would leave him entirely qualified to be drafted. So I would simply put that man back on the classification sheet where he belongs, reexamine him physically, and if he is found fit, under the regulations, send him to camp.

Question.—The opportunity for statistical information and registration of tuberculosis is great. Cannot such statistical information for segregation and treatment be instituted by the Local and Medical Advisory Boards?

I should say so. And that reminds me of a matter that I ought to speak to all of you about in this respect. You will remember that Section 11 or 12 provides that the records of Local and District Boards on these matters are to be records open to public inspection, subject only to this: That those portions of the questionnaire, and the other records relating to a man's physical condition, and relating to dependency, cannot be inspected. In other words, a man ought not to have his physical qualification or disqualification exhibited to the world. Now, it has been thought that there was some conflict when a state law requires that all physicians who get any knowledge of the existence of communicable diseases report them forthwith to the local health authorities—it would seem that there was some conflict there. Well, now, there is not. If there is a state or municipal law or ordinance requiring him to report to the proper health authorities all cases of communicable diseases, then, of course, a physician member of a board is bound by that law, and must report to his health authorities such facts even though he acquires that knowledge on account of his connection with the board. That is not a violation of any confidential information. We have had the question frequently, and I want you all to understand that. Those state laws must be complied with, notwithstanding these physical examination reports as to a man, as confidential, so far as the general public is concerned.

Question.—In case a man is returned in good health with discharge on account of tuberculosis, and in sanatorium and by all diagnostic means it is impossible to prove this diagnosis, should he be placed in Class 5 or Class 1? The local board is satisfied that diagnosis at camp was a mistake. Page 137 we interpret as accepting him again. Are we right?

I should say that the finding of the camp commander as to that is positive, and is binding on the board. Now, if you think that this man at camp has made a mistake, you should get in touch with the medical aide, and get him to take it up through the Adjutant-General with the division surgeon, and suggest that this man be reexamined, and if you do reexamine him yourself and you find absolutely no symptoms of the disease, take it up with the camp surgeon and try to get him to revise it. If the camp surgeon sends the man back, and he says the man has tuberculosis, you do not have the right to substitute your judgment in place of his, although you may take it up the way I suggest.

Question.—When a registrant is called for service and found to be sick and unable to go, should he be sent as soon as he is able?

Yes; if it is a mere temporary defect. You can simply stay his induction order until he is fit for service.

Question.—DR. T. I. MOTTER, Medical Advisory Board 3, Illinois, asks: When a registrant makes appeal to the Advisory Board, shall the Advisory Board examine him only on such conditions as he claims, or make complete examination?

I think that is within the discretion of the Advisory Board. If the Local Board holds him and he says, "They have not any business to hold me, because I have a bad heart murmur," I think the Medical Advisory Board would be justified in examining his heart, and if they find him all right, send him back. That is a matter on which you cannot make a hard and fast rule, but it is a matter within the discretion of the board.

Question.—DR. O. L. WILLIAMSON, Marianna, Ark., asks: Many physically fit negroes have not a chest mobility of 2 inches. They do not know how to expand the chest. What shall be done in such cases?

I guess that is a local question, a problem that you will have to thresh out and settle for yourself. I do not know how to give a negro 4 inch expansion, if he has only 2.

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SATURDAY, JULY 13, 1918

## MORTALITY PHENOMENA IN THE PHILIPPINES

There has been a general tendency during the past few decades for the death rate in all civilized countries to fall. Undoubtedly the conquest of many of the diseases of childhood and the better control of communicable diseases, along with other modern developments of hygiene, have contributed to bring about this result. Nevertheless, the contrasts between the mortality statistics in the United States and some of the leading European countries show that it is important to consider the conditions in each country by themselves, if further progress in the mastery over early death is to be attained. For example, whereas in England and Wales the death rate has shown a decrease at all ages, in this country in recent years there has appeared to be an increase in the rate beyond the age of 45 years. This has been ascribed to the encroachment of the degenerative or regressive types of diseases, which affect chiefly those in middle life and old age.

Some new data bearing on the incidence of age and other factors in relation to deaths in our insular possessions in the Far East have been gathered by Manlove[1] at the University of the Philippines in Manila. The Philippines have a high mortality at an early period of life; this is likewise true in India where, as has been shown by Rogers,[2] the majority of deaths occur in the same period. Out of a Philippine population of seven millions within the registration area, 55 per cent. of the deaths took place between birth and 9 years, and 73 per cent. before the age of 40.

As the average duration of the life of Filipinos is shown to be considerably below forty years, great interest and still greater hygienic importance attach to the probable causes. These have been given by Manlove as high infant mortality, tuberculosis and the tropical diseases, such as cholera, dysentery and tropical fevers. The United States Census Bureau calculated in 1912 that 400,000 of the present inhabitants of the Philippine Islands were "doomed to die of tuberculosis." During one year nearly 50 per cent. of the Filipino infants died.

If these conditions in earlier life are unlike those found in this country so far as the prevalence of tropical diseases forms a contrast in the East as a cause of death, the situation there shows a more or less constant increase of atheroma in successive decades of life, just as is true in Western countries. The incidence of atheroma with associated hypertrophy of the heart and chronic interstitial nephritis increases suddenly after 40 years of age, when it becomes an important factor in the cause of death. The high percentage of atheroma is probably due more often to chronic intestinal disorder leading to chronic toxemia, according to Manlove, than to any other condition, such as syphilis, alcoholism or abnormal blood pressure. The chief manifestations of syphilis in Filipinos as seen at necropsy seem to be in the arteries. High blood pressure and strain do not appear to be important factors in the production of atheroma or, probably, in the genesis of aneurysms in these people. The findings concerning vascular lesions at necropsy in the Philippines agree with the observations of Rogers for India.

1. Manlove, C. H.: Incidence of Age, Atheroma, and Aneurysms as Seen in Autopsies of Filipinos, Philippine Jour. Sc. (B), 1917, **12**, 233.

2. Rogers, L.: Gleanings from the Calcutta Post-Mortem Records, Indian Med. Gaz., 1910, **45**, 84, 124.

## INVALIDS AND WAR TIME FOOD RESTRICTIONS

As soon as the prospect of some degree of governmental control over food loomed up as a contingency of the war, many invalids and not a few of their medical advisers began to experience uneasiness regarding the effects on the sick. Thus far we in this country have undergone few if any severe hardships from restrictions of diet. Properly disposed persons have, it is true, given up wheat or, rather, have replaced this food with an equivalent substitutive cereal. Our sugar allowance has yet to be reduced to a limit that entails even slight changes in the palatability of our meals. The shortage of beef and some other forms of flesh is just beginning to make itself more keenly felt among the less well-to-do.

Under such circumstances our American patients have yet to experience any real hardships of food restrictions, even when voluntary rationing has been adopted by faithful patriots. But no one can foresee the immediate cessation of hostilities, not to speak of the restoration of normal food conditions in the world. Hence it is the part of preparedness to anticipate possible future deprivations by a plan of preparatory decisions that shall not menace the welfare of the sick more than is absolutely necessary, if, indeed, any danger in diet need be involved at all. Many months of experience in the case of our allies must serve in part as a guide. Recent regulations by the British Ministry of Food indicate that invalids are to be well

cared for. The regulations allow a greatly increased ration to sufferers from diabetes and from tuberculosis. Diabetics are allowed the maximum of 2½ pounds of butcher's meat, 1 pound of bacon, and 1½ pounds of butter or margarin weekly. Tuberculosis patients are allowed a maximum of 2½ pounds of meat, 1 pound of bacon, and 1 pound of butter weekly, in view of the fact that protein and fat are necessary to the diet of consumptives. Most foods, besides milk, which are important in cooking for the sick—such as eggs, fish, rice and flour—are not rationed. For all who need it, extra milk may be obtained through local food controllers.

The medical profession will endorse these special dispensations which help to provide "diets suitable to the complaints." Nursing mothers obviously deserve a supplemented ration, and particularly an extra allowance of milk where the supply is restricted. On the other hand, it is interesting to note, in view of a widespread demand for an allowance of white bread to invalids, that the British Ministry of Foods does not favor extensive applications of this sort, since it seems demonstrated that although the war breads may not always be as palatable as white bread, they are, when properly baked and thoroughly chewed, satisfactorily digested. We believe that American experts in nutrition are inclined to adopt this view despite the occasional outburst against the indigestibility of some special cereal mixture.

Fortunately the war may help to dispel the unfounded belief in some superior nutritive virtue of beef tea. However much it may please the palate or satisfy the patient, this concoction is anything but an efficient food. A shortage need not unduly disturb the dietitian. The same is true of a number of so-called sick room specialties or delicacies which may be delectable yet not indispensable. Accordingly, when physicians are importuned to provide special privileges for patients, they may do well to bear in mind a recent utterance[1] by one familiar with modern dietetics and the science of nutrition:

> The physician's chief difficulty is not with the sick. It is with those, not obviously ill, who assume that the food to which they are accustomed is the food that is necessary for their health, and appeal to him to support this view by a certificate. Many people have grown up in the belief that their digestion is peculiar. Occasionally that is true, but nearly always it is not. Every one of experience will agree that genuine idiosyncrasies are among the rarities of medicine. The thoughtless indulgence of parents is sometimes to blame for restricted tastes; but whatever the cause may be, all doctors know what a handicap to the individual such special dislikes are in illness; and at the present time they prove most inconvenient to their owners. No one would pretend that the foods now available are what we would prefer either in health or sickness, and those who feel the change most will have general sympathy; nevertheless, it is the duty of the medical man to explain to such applicants that their condition is not one for the treatment of which it is justifiable to ask for a larger share of the national store.

1. Spriggs, E. I.: Invalid Rations, Brit. Med. Jour., 1918, **1**, 505.

It would, indeed, be difficult to frame the problem and the duty of the chronic dietary complainant with greater truth and fairness to all that is involved.

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## THE PATHOLOGIC EFFECTS OF CRAB LICE

Parasitology has ceased in recent years to be the concern only of the zoological specialist. The life history and habits of the animal parasites that infest man deserve more than passing notice from the student of medicine because they are already recognized as being involved in several of the serious infections of human beings. The relation of the flea to bubonic plague is now a familiar story. The body louse, *Pediculus humanus*, feeding on the blood of a patient, may become transferred to a healthy person and readily transmit the infectious agent. The demonstration of such a mode of dissemination of trench fever has only recently been an achievement of American scientists working near the battlefields of Europe.[1] The war has likewise emphasized the association of such parasites with the formidable typhus fever, and made delousing a sanitary precaution in many armed camps. Therefore, instead of dismissing the consideration of the mosquito, the flea and the louse as insects that are the subject of entomologic curiosity, the medical investigator of today is eager, and quite properly so, to cull every item of information regarding their biologic behavior. Thus has the modern science of parasitology become truly dignified.

Heretofore the crab louse, *Phthirus pubis*, has received little attention in comparison with the more familiar forms of body lice belonging to the genus *Pediculus*. It is not so prevalent, and it is not known to convey any infective disease. Statistics collected for verminous persons admitted to Boston hospitals show that about 3 per cent. were infested with crab lice. Thanks to the studies of Nuttall,[2] our knowledge of the biology and pathologic effects of this species has been made clearer. Although it appears to be parasitic chiefly on persons leading an active sexual life, recent investigations have shown that the crab lice frequently infest soldiers in barrack, a fact which gives an added wartime significance to studies of the insect. Although the pubic and the perianal and axillary regions are the sites of selection for its parasitism, there is according to Nuttall no evidence that these habitats are chosen because of their higher temperature and moisture. The selection of these regions seems to depend on the character of their hairiness. The belief entertained by some writers that crab lice are found only on white races is no longer tenable. It is true that these parasites are rarely found among

1. Strong, R. P.; Swift, H. F.; Opie, E. L.; MacNeal, W. J.; Baetjer, Walter; Pappenheimer, A. M., and Peacock, A. D.: Report on Progress of Trench Fever Investigations, Am. Red Cross Med. Bull., March, 1918; THE JOURNAL A. M. A., June 1, 1918, p. 1597.

2. Nuttall, G. H. F.: The Pathological Effects of Phthirus Pubis, Parasitology, 1918, **10**, 375; The Biology of Phthirus Pubis, ibid., p. 383, from which most of the following statements are taken.

African negroes, owing to their cleanly habits; they shave their armpits and pubes. The lice have been found on the negroes who allow their pubic hair to grow.

The crab louse differs in its feeding habits from the more familiar body louse. It is relatively uncommon to see the insects wandering. They are almost helpless when detached from the hairs to which they cling continuously on the body. Indeed, the parasites move about by shifting from hair to hair. Nuttall points out that for this reason the crab louse is much more likely to be conveyed passively from host to host than is the genus *Pediculus*. Unless disturbed, the parasite remains confined throughout life to a limited area on the host's skin. Scratching of their persons by infected individuals no doubt aids in the spread of the crab lice on them and the dissemination of the insect farther afield. Shed hairs may become agencies in the distribution. Their habit of continuous feeding explains why the insects die so quickly when removed from the host.

According to Nuttall, the pathologic effects of the parasitism of the crab louse on man are on the whole of slight degree. Some persons are more sensitive than others to its presence. On the one hand, the louse may produce no reaction by its bite, or it may be tolerated on the person for years; on the other hand, it may induce pruritus of a more or less severe character, especially in the parts of the body that are most infested and where the skin is most delicate, namely, about the genitalia, the axillae and eyelids. All grades of pruritus are observable. Pale bluish-gray maculae mark the site of the insect's bite. They appear in from eight to twenty-four hours after the louse begins to feed on the spot affected. These maculae are a specific sign of the presence of *Phthirus* on man, but they are not always observed. They disappear usually within a week after removal of the offending parasite, disappearing more rapidly when the skin is irritated. Presumably these maculae are due to extravasated and altered blood.

Melanism, a pigmentation and discoloration amounting almost to blackness, has been described as due to the crab louse. Nuttall is convinced that when this occurs it is of nonspecific origin. It may follow infestation with either form of lice, arising in the course of pediculosis as well as phthiriasis. When itching due to the presence of any skin parasite is prolonged, the scratching leads to hyperemia, pigmentation and desquamation. Melanodermia occurs. Papular eruptions and eczematous inflammation may supervene; they are due to the human insults to the skin. Lesions induced obviously may lead to secondary skin infection with pyogenic bacteria. Rarely a febrile condition may thus follow. At present the allegation that the crab louse may convey tuberculosis scarcely deserves consideration.

## THE EXCRETORY CAPACITY OF THE NORMAL KIDNEY

The kidney represents one leg of the tripod of life, to quote an old analogy long used in physiology, because the persistence of its function is indispensable to the maintenance of health in the higher organisms. Experience has demonstrated that all of the mechanisms of the body which have important activities to perform are endowed with large "factors of safety"; that is, they can, without detriment, carry a load far greater than that which is customarily expected of them. Even a greatly fatigued muscle group can be spurred up to an enormous final effort without danger, or at least without frequent damage. How about the capacity of the kidney to increase its work? It is an everyday experience in surgical cases of nephrectomy to see one kidney perform the duties that were previously exercised by two; in other words, the work of the kidney may easily be doubled without detriment.

Addis[1] and his collaborators in the Medical Clinic of Leland Stanford Junior University have found a far higher limit of performance in their experiments on urea excretion. The concentration of urea in the blood is one of the factors regulating the excretion of this waste product. The amount of active secreting tissue in the kidney is another. That the size of the kidney determines the order of magnitude of the average rate of urea excretion at all blood urea concentrations is shown by a comparison of the output in species of different sizes, respectively, at different levels of urea content in the circulating fluid. The average rate in man is more than thirty times greater than that in the rabbit. As the Californian clinicians express it, approximately a man weighs thirty times more than a medium sized rabbit. From the relation that exists between body weight and kidney weight there is presumably about thirty times more renal tissue in man than in the rabbit. The order of magnitude of the average rate of urea excretion appears, therefore, to be a function of the size of the kidney.

We are further assured that under physiologic conditions the performance of the kidney is not influenced by its limitations. This is only a potential factor, says Addis, in the regulation of renal activity, operative in extreme cases of reduction of kidney size by disease, or in the entirely artificial condition arising from the ingestion of large quantities of urea. The normal kidney has a possible range of action much greater than that which it actually covers; for if the average blood urea concentration of the rabbit is taken as 30 mg. per hundred c.c., the fact that the ratio continues to increase up to a level of 225 mg. indicates that the capacity of the kidney is about seven

1. Addis, Thomas; Sheoky, A. E., and Bevier, G.: The Regulation of Renal Activity, II, The Regulation of Urea Excretion by Anatomical Factors, Am. Jour. Physiol., 1918, **46**, 11.

times greater than that which is just sufficient. In anatomic terms it shows, to quote Addis further, that there is seven times more renal tissue than is ordinarily called into full action. It is far fetched, therefore, to speak of kidney "fatigue" in health, when there is little evidence, in the light of such a factor of safety, to show that ordinarily the products of metabolic activity of the kidney accumulate so as to hamper the work of the secreting cells. The pathologic kidney, on the other hand, presents different situations.

## Current Comment

### THE HEN AND HER IMITATORS

Probably few foods are so widely used, so greatly relished or so much to be depended on as are eggs. The canny Scot may always be trusted as a judge of values, and the story is told of the Highlander and the Tommy who, on duty in France, captured a hen. The Tommy was anxious to kill it at once and eat it, but the Highlander said: "No. Let us keep her until tomorrow. She might lay an egg." Certain thrifty manufacturers, realizing the great demand for this food product and the rapidly increasing price, have placed on the market so-called substitutes. At least fifty such products are already available. At the request of the Pennsylvania State Department of Agriculture, Prof. C. H. Lawall[1] investigated more than forty of these substitutes. In the introduction to his report he says:

> One of the most reprehensible ways of making money is to take some common, everyday substance, disguise or alter its appearance in some way, make a lot of exaggerated statements regarding it, and then sell it for about ten or fifteen times its market value, extolling it as an economical substitute for some expensive article. There has been no preparation of this class, within recent years, that has sprung into prominence with such rapidity as the so-called egg substitutes and with so little merit or legitimate warrant for their manufacture and sale.

The specimens exhibited resemble the "patent medicine" in many ways besides the method of promotion. It must be evident to any one that from 2 to 4 ounces of a yellow powder cannot possibly represent the nutritive value of two or three dozen eggs, and yet this is one of the mildest claims made by most of these exploiters. There is no question that these substitutes, rather than furthering economy, really add to the high cost of living. Practically every one of them has been found to be chiefly cornstarch colored with coal tar. The protein content varies from 0.7 to 35 per cent. Commercially dried egg, which is a legitimate market product, contains about 45 per cent. of protein. An egg of average size has a nutritive value of 75 calories; three dozen eggs would have a total food value of 2,700 calories. The nutritive value of almost any of the substitutes is about 100 calories an ounce, so that the largest of any of the packages would have a nutritive value of less than one-sixth the number of eggs it claims to replace. In other words, the purchaser replaces an article of diet with a product costing one third as much, but having from one sixth to one eighth of the food value. Moreover, the substitute is colored with an artificial coal tar dye, the purpose being deceptive. The names of the product in every case are chosen to attract the purchaser. They range from simple Egg-O to Egg-Less, Eggnit, Sa-Van-Egg and the less grammatical Savaegg to the Miracle Egg Dispenser, Near-Egg and the miserable pun, Ecc-Kon-O-My. Lawall's conclusions are worthy of reprinting in toto:

> First. The brightest light of publicity should be shed on these products, and the heaviest weight of official authority should be invoked to discourage their manufacture and sale.
>
> Second. They afford an opportunity for unpatriotic profiteering, combined with the development of the art of camouflage to the point of perfection.
>
> Third. Their names are deceptive; their composition in no wise resembles that of egg; the presence of color, in those where it is used, is a fraud, and the claims as to replacing value are either deliberate misstatements or ambiguous phrases.
>
> Finally. Egg substitutes serve no purpose that cannot be served just as satisfactorily and much more cheaply by articles in daily use in every household.

The food commissioner of Pennsylvania, concurring in the statements of Professor Lawall, states that these substitutes are in violation of the general food act of that state, and if found for sale in the state of Pennsylvania, they will be dealt with accordingly.

1. Lawall, Charles H., and Foust, James: Egg Substitutes and So-Called Egg Savers, Bull. Penn. Dept. of Agriculture, 1918, **1**, No. 7.

### YEASTLIKE FUNGI IN THE HUMAN INTESTINAL TRACT

Through his studies on the etiology of sprue, Ashford[1] has again directed attention to the possible rôle of fungi in certain diseases. He announced the constant presence of a yeastlike organism in the digestive tract of sprue patients. Yeasts and similar organisms are doubtless being taken into the body daily, just as are bacteria, through alimentary channels; and their fate and behavior are matters of obvious concern. Anderson[2] has remarked in this connection that some of the earliest attempts to associate microorganisms with disease resulted in the discovery of fungi as their causal agents. The fungi causing thrush and ringworm were known and described before any of the pathogenic bacteria had been isolated. Anderson reminds us that during the last quarter of the nineteenth century the bacterial diseases occupied so much of the time of students of human pathology that only in recent years has attention again been directed to the less important fungous diseases. Hence there is timely interest to the investigations he has made in the department of plant pathology of the University of Illinois on the character of the yeastlike fungi in the human intestinal tract. The value of the records may be in part inferred

1. Ashford, B. K.: Is Sprue a Moniliasis of the Digestive Tract? Am. Jour. Trop. Dis., 1915-1916, **3**, 32; A Monilia Found in Certain Cases of Sprue, THE JOURNAL A. M. A., March 6, 1915, p. 810; Relation of the Genus "Monilia" to Certain Fermentative Conditions of the Intestinal Tract in Porto Rico, June 5, 1915, p. 1893; Further Experimentation in Animals with a Monilia Commonly Found in Sprue, Am. Jour. Med. Sc., 1916, **151**, 520.

2. Anderson, H. W.: Yeastlike Fungi of the Human Intestinal Tract, Jour. Infect. Dis., 1917, **21**, 341.

from the fact that 175 persons were examined. Yeastlike fungi were commonly found. They were of many species and, for the most part, such types as are commonly present in nature and known as "wild yeasts." Presumably they are ingested with the food. If one may judge from Anderson's observations, however, the yeastlike organisms are present in relatively small numbers only in healthy persons. There seems to be no one species commonly present in the intestinal tract; furthermore, the feces of persons suffering from gastro-intestinal disorders of various types do not yield a larger number of yeasts than those from healthy persons. Nonpathogenic yeasts, when fed in mass, can pass through the alimentary tract in living condition and may be found in great numbers in the feces. Anderson states that they do not cause serious inconvenience when fed alone, and are not retained longer than the ingested food. It is by no means unlikely, however, that the presence of active yeasts in large numbers over long periods of time might give rise to harmful products or that the organisms might be able after a time to establish themselves in the mucous membrane to the detriment of the host.

## ENDOGENOUS URIC ACID

Although the greater proportion of the uric acid that finds its way into the urine is demonstrated to represent the metabolic end-product of ingested purins or purin-yielding compounds, there is a smaller though always present fraction which appears even in the absence of such possible precursors. As a rule it has been believed that this endogenous uric acid, which usually amounts to about 0.3 gm. per day in an adult man, has its origin in the body tissues or else in the bodies of bacteria, which are always present in the alimentary canal. The more popular assumption has associated the endogenous uric acid with the disintegration of nucleoproteins in the continual metabolism of the body cells. However, observations made on the hourly output of endogenous uric acid under various conditions of food intake devoid of sources for this product have shown irregularities in the rate of the elimination of the purin end-product. It appears to be increased for a time after the ingestion of meals, so that some investigators, notably Mares, Smetanka, and Mendel and Stehle, have ascribed the augmented production to the work of the digestive glands. Renewed study of the problem at the University of Illinois by Lewis, Dunn and Doisy[1] has given a new turn to the subject. It was found that ingestion of protein in the form of egg-white or cheese, and likewise the intake of amino-acids, such as glycocoll, alanin, and aspartic and glutamic acids, are followed by a sharp rise in the output of endogenous uric acid about two hours after the intake. Neither urea nor ammonium chlorid, nitrogenous compounds administered in amounts comparable to the amino-acids, had any influence on the uric acid output. These results are believed by the Illinois physiologic chemists to indicate that the rise in uric acid excretion following ingestion of protein food is due not so much to the work of the digestive glands as to stimulation of the cellular metabolism by the amino-acids liberated in the digestion of the protein.

1. Lewis, H. B.; Dunn, M. S., and Doisy, E. A.: Studies in Endogenous Uric Acid Metabolism, Jour. Biol. Chem., 1918, **33**, 15.

## FATTY ACIDS AND HEMOLYSIS

Faust's observations on the toxicity of oleic acid and oleates, and Tallqvist's studies on bothriocephalus anemia, have usually been cited as indicative of the significance of unsaturated fatty acids, such as oleic acid, in certain pathologic processes.[1] As a matter of fact, very little has been known definitely regarding the extent to which these compounds actually may occur in the organism. Chemical examination of fats of different tissue origin clearly demonstrates that the content of unsaturated fatty acid radicals, and notably of oleic acid, varies in different parts of the organism. Indeed, Leathes[2] has built up an elaborate theory regarding the saturation and desaturation of fats in the body, and the part that the liver in particular may play in the process. Fatty acids are transported in the circulation either free or combined as glycerids (true fats), esters of cholesterol, or soaps, as well as in the phosphatids like lecithin. To what extent they may occur has now been shown by Csonka,[3] who finds that unsaturated fatty acids are a product of normal metabolism, being present in normal human blood, in which they form 48 per cent. of the total fatty acids. Judged by their iodin absorption power there are, in addition to oleic acid, other unsaturated fatty acids both higher and lower than oleic, although in small amounts. The iodin numbers of the unsaturated fatty acids in pathologic conditions are generally higher than in normal persons, especially in patients with low hemoglobin values. As such acids exist in normal human blood as well as in pathologic conditions without anemia, Csonka believes that it is necessary to look further for the primary cause of toxic hemolysis. Some of the current conceptions regarding lytic reactions in the blood will hereby demand revision and reinvestigation.

## ANTHRAX FROM SHAVING BRUSHES

The occurrence of several cases of anthrax from infected shaving brushes among the American military forces indicates that we are not free from a danger which has been called to our attention by the English in the last three years. The first recorded case, apparently, was noted by the London correspondent of THE JOURNAL[4] on July 9, 1915, only a week after the necropsy. This case, one other infection from a brush of the same origin, and a third due to a brush from a different source were thoroughly traced and reported by Elworthy.[5] Other cases have been mentioned from

1. Faust, E. S.: Arch. f. exper. Path. u. Pharmakol., Supp., 1908, p. 171. Tallqvist, T. W.: Ztschr. f. klin. Med., 1907, **61**, 427. Faust and Tallqvist: Arch. f. exper. Path. u. Pharmakol., 1907, **57**, 367.
2. Leathes, J. B.: The Fats, Monographs on Biochemistry; Ergebn. d. Physiol., 1909, **8**, 356.
3. Csonka, F. A.: The Fatty Acids in Human Blood in Normal and Pathological Conditions, Jour. Biol. Chem., 1918, **33**, 401.
4. THE JOURNAL A. M. A., July 24, 1915, p. 348.
5. Elworthy, R. R.: Outbreak of Anthrax Conveyed by Infected Shaving Brushes, Lancet, London, 1916, **1**, 20.

time to time by THE JOURNAL'S correspondent,[6] the most detailed account of the whole series of cases up to February, 1917, appearing as a blue book of the Local Government Board.[7] For the benefit of those who may encounter cases of this nature, and also for a general warning, a brief review of this report is given here. Of sixty-five English cases, civilian and military, sixteen were proved beyond reasonable doubt to have originated from infected shaving brushes, the evidence being that a new brush was used in each case just before the malignant pustule appeared, and that virulent anthrax was found not merely on the patient's brush (in which case the patient might have infected it), but on similar brushes obtained from the same shops or wholesalers. Most of the other cases were suspected of having originated in the same way. It is alleged that four of these cases were due to shaving brushes made in New York. Obviously these reports indicate the necessity of more care than is being given to the preparation of toilet accessories made from animal hides.

## *Medical Mobilization and the War*

### Students on Overseas Duty Not Granted Furlough

The Adjutant-General of the Army announces that is is the policy of the War Department not to allow the return of enlisted men from overseas to the United States for the purpose of completing their education. This policy applies to medical, dental and veterinary students.

### New Regulations Regarding the Serving of Liquor to Soldiers

It is announced that new regulations have been made relative to serving liquor to soldiers which prevent selling, bartering, giving, serving, or knowingly delivering alcoholic liquor to any officer or member of the military forces within the United States, its territories or possessions or any place under its control, except to medical officers for medicinal purposes.

### Physicians Born in Enemy Alien Countries Eligible for Commission Under Restricted Conditions

The Secretary of War has ruled that men born in an alien enemy country or in a country allied thereto, who emigrated to the United States prior to 5 years of age and who are of approved loyalty and a United States citizen either through their own or through their parents' naturalization, will be deemed eligible for commission in the Army. This, of course, includes commissions for the Medical Reserve Corps.

### Public Health Activities Under One Control

Orders have been issued that all sanitary and public health activities carried on by any executive bureau, agency or office especially created for or concerned in the prosecution of the existing war shall be exercised under the supervision and control of the Secretary of the Treasury. This does not affect the jurisdiction exercised by the Surgeons-General of the Army and of the Navy and the Provost Marshal-General in the performance of their functions which are military in character as distinguished from civil public health duties.

6. THE JOURNAL A. M. A., Sept. 11, 1916, p. 1030; Jan. 13, 1917, p. 132; Aug. 4, 1917, p. 396.

7. Coutts, F. J. H.: Report on an Inquiry into Cases of Anthrax (Malignant Pustule or External Anthrax) Suspected to be Due to the Use of Infected Shaving Brushes, Reports of the Local Government Board on Public Health and Medical Subjects, New Series, No. 112, 1917.

### Women Health Officers for Munitions Plants

Women health officers for munitions plants are to be trained under the direction of the women's division of the industrial service section of the Army Ordnance Department for the purpose of maintaining the health of women workers in munitions plants. An eight weeks' course was commenced, June 26, at Mount Holyoke College, South Hadley, Mass., for a limited number of women health officers who have had a college education or its equivalent, and most of whom have had experience with working women. These candidates are to be trained as health experts who, having a knowledge of the psychology of the woman worker, will be able to do constructive, preventive health work such as the physicians and nurses now employed by the plants are unable to do. These women health officers must, of course, be in good health, and be able to create among their charges a desire for wholesome living.

### Mobile Hospital Units Ready for Duty Overseas

Mobile hospital units, ready to embark for service abroad immediately, including base hospitals, evacuation hospitals, evacuation ambulance companies, railroad hospital trains, convalescent camps and medical supply depots, have been organized by the Surgeon-General's Office in addition to the regular medical department units accompanying the various military organizations. Fifty railroad hospital trains of sixteen cars each, including operating rooms, kitchens, personnel car, etc., and with a capacity of 400 patients, have either been ordered sent to or have been delivered to the American Expeditionary Forces. Half of the organized base hospitals not yet in France are ready to leave at from two weeks' to a month's notice, each with a personnel of thirty-five medical and sanitary officers, 100 Army nurses (women) and 200 enlisted men, and a capacity of 1,000 beds adapted for expansion. The evacuation hospitals have each a personnel of thirty-four officers and 237 men, with a normal capacity of 1,000 beds, and have about the same equipment as the base hospitals. Each evacuation ambulance company consists of one officer and thirty-seven men who operate twenty ambulances; however, the strength of these companies can be increased on arrival in Europe. The personnel formed on this side for a convalescent camp include ten officers and ninety enlisted men, later augmented and largely replaced by medical officers and enlisted men from among those convalescing. Such a camp cares for 10,000 patients. At these camps a great deal of reconstruction work will be done, as will also be done in the convalescent depot now being formed for overseas duty.

### Prisoners of War

The following American medical officers are reported to be prisoners of war in Germany: Capt. Elmer J. Presper, Philadelphia, attached to B. E. F.; Dr. J. Breckenridge Bayne, Washington, D. C., who has been serving in Roumania; Lieut. Robert Barnwell Rhett, M. R. C., Charleston, S. C., and Lieut. J. Frank Crawford, M. R. C., Warsaw, N. Y.

### Wounded and Missing

Capt. Arthur H. Sewing, M. R. C., St. Louis, is reported to be missing.——Lieut. Allen G. Heard, M. R. C., Galveston, Texas, has recovered from the effects of a German gas attack, and has been ordered to six months' duty in a base hospital. ——Capt. William J. Burdell, M. R. C., Lugoff, S. C., suffered the loss of his index finger and a wound of the thigh by a bomb dropped by a German aeroplane during a night raid. ——Lieut. William J. McGregor, M. R. C., Wilkinsburg, who was wounded in France several months ago, has been transferred to the American Red Cross Hospital, London.——Capt. Charles H. Arnold, M. R. C., Lincoln, Neb., on duty with the British Army, suffered a severe wound of the head recently. ——Dr. Paul V. Stewart, M. R. C., Warren, Pa., who was gassed recently, is reported to be convalescent.——Capt. Howard T. Wickert, M. R. C., Huntsville, Utah, is under treatment in a Paris hospital recovering from the effects of poison gas.——Dr. Francis E. Fronczak, health commissioner of Buffalo, was wounded by shrapnel, in the head, face and

right hand, while making inspection of front line trenches. ——In the *Official Bulletin* of July 7 it is announced that Major Daniel F. McGuire, Pensacola, Fla., has been seriously wounded. This presumably applies to Major Daniel F. Maguire, M. C., U. S. Army, who is known to be in France and his home address is Pensacola, Fla.

### Sanitary Section Cited

For courage in action the members of the 65th Sanitary Section, U. S. Army, has been cited in communique signed by the commander of the 121st Infantry Division. The communique states that in the heavy battles taking place the personnel of the sanitary section cited has been "always ready to go forward to the zones most intensely under enemy fire and expose themselves voluntarily to rescue and bring back our wounded. Worthy sons of their great country they show the initiative, the audacity, the calm courage of their race."

### American Surgeons Decorated

Dr. W. D. Carlyle, a dentist of Salem, Ore., and at present on duty with the Y. M. C. A., Russian unit in France, was recently decorated with the Order of Stanislaus for bravery in caring for wounded.——Lieut. John W. Sherrick, M. R. C., Ann Arbor, Mich., has been given the military cross by the British government for bravery and devoted service in the trenches.——Lieut. Samuel H. Adams, M. R. C., Pittsburgh, now on duty with the British forces in France, has been awarded the military cross for bringing in an ambulance under shell fire.——Admiral Wilson has cited for daring bravery in rescuing thirty-four of the seventy-five members of the American munition ship *Florence*, which caught fire in French waters, P. A. Surg. Jesse A. Flautt, U. S. Navy, Galveston, Texas, and Asst. Surg. George E. Cram, Norwalk, U. S. Navy.——Lieut. Charles F. McCarty, Brooklyn, attached to the 9th Essex, has been given the military cross.——It was announced on July 5, that the Distinguished Service Cross had been awarded to Surg. Wrey G. Farwell, U. S. Navy, who "on June 6, personally supervised the evacuation of his wounded commanding officer across a field exposed to fire of machine guns and snipers, thereby displaying the greatest qualities of self-sacrifice and fidelity to duty," and to Asst. Surg. William H. Michael, U. S. Navy, who "displayed unusual courage on the morning of June 6, near Bois de Belleau when he established a dressing station in the open exposed to shell and machine gun fire. Under these conditions he worked several hours, evacuating a large number of wounded."

## COMMISSIONS ACCEPTED, MEDICAL RESERVE CORPS, U. S. ARMY

*CALIFORNIA*
C. D. R. GLEASON, San Francisco

*CONNECTICUT*
M. L. CHENEY, Bridgeport

*DISTRICT OF COLUMBIA*
F. D. ADAMS, Washington.
C. M. DOLLMAN, Washington

*GEORGIA*
T. S. CLAY, Savannah

*ILLINOIS*
A. H. CARTER, Chicago

*IOWA*
A. C. DAVIS, Iowa City

*KANSAS*
W. B. BURR, Longton

*KENTUCKY*
A. BELL, Hopkinsville
W. W. DURHAM, Hopkinsville
J. G. GAITHER, Hopkinsville

*MASSACHUSETTS*
J. W. CLARK, Attleboro
C. S. CAPELLE, Boston
W. E. FAULKNER, Boston
J. P. A. BACON, Lawrence
A. R. GARDNER, Lowell
W. H. DRAKE, Weymouth

*MICHIGAN*
H. L. CHARLES, Calumet
B. R. CORBUS, Grand Rapids

*MINNESOTA*
H. B. GRIMES, Madelia

*MISSOURI*
A. M. GREGG, Joplin

*NEW HAMPSHIRE*
L. R. BROWN, Leconia

*NEW JERSEY*
N. W. CURRIE, Plainfield
C. M. GRAY, Vineland

*NEW YORK*
R. V. ALLEN, Canandaigua
C. W. GROVE, Geneva
M. CAMPBELL, New York

*NORTH CAROLINA*
C. O. ABERNETHY, Raleigh

*RHODE ISLAND*
W. B. CUTTS, Providence

*TEXAS*
J. M. F. GILL, Austin
C. W. GRIFFITH, La Porte
T. N. GOODSON, San Antonio

## COMMISSIONS ACCEPTED, U. S. NAVAL RESERVE FORCE

*DISTRICT OF COLUMBIA*
J. A. CONNOR, Washington

*FLORIDA*
M. P. DEBOE, Cocoa

*IDAHO*
R. J. CLUEN, Boise

*ILLINOIS*
T. O. ANDERSON, Chicago
P. R. HUBER, Chicago
B. H. WILCOX, Panama
A. H. BITTER, Quincy
J. H. WALLACE, Sandwich

*INDIANA*
L. E. FRITSCH, Evansville
C. W. YECK, Evansville
L. K. RYAN, Gary
H. O. WILLIAMS, Kendellville

*IOWA*
H. P. COLE, Thurman

*KANSAS*
C. E. SANDERS, Rosedale

*MARYLAND*
J. J. WEBER, Baltimore

*MASSACHUSETTS*
H. C. BEAN, Boston
W. H. GREENE, Boston
A. J. SULLIVAN, Brookton
I. A. MATHER, Coleraine
W. H. O'CONNOR, Dorchester
W. H. FLANDERS, Melrose
J. M. WILCOX, Newton Center
F. VAN NUYS, Weston

*MICHIGAN*
R. G. FERRIS, Detroit
R. A. PERKINS, Detroit
J. M. WHALEN, Grand Rapids

*MISSISSIPPI*
R. R. WARD, Shipman

*MISSOURI*
R. D. COWAN, Ardrick
J. J. DAVIS, Kansas City
J. I. DENMAR, Kansas City
E. P. Hall, Kansas City
P. H. OWENS, Kansas City
A. L. PORTER, Kansas City
R. BARNWELL, St. Louis
L. C. McAMIS, St. Louis
S. MOORE, St. Louis
L. A. WILL, St. Louis

*NEW JERSEY*
J. I. B. VAIL, Blairstown
C. SIRKEN, Passaic
M. E. STITES, Port Norris

*NEW YORK*
L. F. CRAVER, Albany
A. BRAUNSTEIN, Bronx
J. E. HODES, Brooklyn
L. M. RUDERMAN, Brooklyn
J. SKEER, Brooklyn
F. D. SCUDDER, Locust Valley
E. B. BICKLEY, New York
J. E. CONROY, New York
F. M. GOODCHILD, New York
J. A. McCARTHY, New York
G. R. PETZ, New York
H. ROSENSTEIN, New York
F. E. TWINEY, New York
C. A. TWITZ, New York
G. C. VOGT, Syracuse

*NORTH CAROLINA*
H. McCOY, Asheville
V. E. ERVIN, Troutmans

*OHIO*
V. J. GALLAGHER, Cleveland
H. M. O'BRIEN, Cleveland

*OKLAHOMA*
T. B. HINSON, Enid

*PENNSYLVANIA*
R. S. GRIFFITH, Newquehoning
F. E. BRISTOL, Philadelphia
J. V. F. CLAY, Philadelphia
T. C. KELLY, Philadelphia
R. A. LEOPOLD, Philadelphia
J. G. PENZA, Philadelphia
R. S. REEVES, Philadelphia
C. D. SMITH, Philadelphia
L. S. VOORHEES, Philadelphia
A. E. BURKE, Scranton
W. J. O'MALLEY, Scranton
J. R. BURNS, Wilkes-Barre

*SOUTH CAROLINA*
A. F. MAHONEY, Clio

*TEXAS*
R. H. WHITE, Meridian

*VIRGINIA*
J. F. TERRELL, Ashland
G. H. LIGHTNOR, Haymarket
N. W. FILE, Ransons
W. A. O'BRIEN, Richmond
E. G. WILLIAMS, Richmond
W. W. RIXEY, University

## CORRECTION

Under "Orders to Officers of the Medical Reserve Corps," June 29, it is stated that Capt. JOHN T. O'FERRALL is ordered *to Fort Oglethorpe* for instruction in orthopedic surgery. An error was made in copying the order which reads: "Report in person *to the commandant*, Medical Officers' Training Camp, Camp Greenleaf, for the purpose of giving instruction in orthopedic surgery."

## ORDERS TO OFFICERS OF THE MEDICAL CORPS AND OF THE MEDICAL CORPS OF THE NATIONAL ARMY

*To Camp Beauregard*, Alexandria, La., as camp surgeon, from Camp Logan, Major HENRY P. CARTER.

*To Camp Colt*, Gettysburg, Pa., for sanitary inspection, and on completion *to his proper station*, Col. WESTON P. CHAMBERLAIN.

*To Camp Crane*, Allentown, Pa., for duty, and on completion *to his proper station*, Col. WILLIAM H. MONCRIEF.

*To Camp Devens*, Ayer, Mass., base hospital from Lakewood, Col. ALLEN M. SMITH.

*To Camp Fremont*, Palo Alto, Calif., as assistant to camp surgeon, from San Francisco, Major WALTER F. DAVENPORT.

*To Camp Hancock*, Augusta, Ga., for temporary duty, from Camp McClellan, Capt. OSCAR C. FRUNDT.

*To Camp Lee*, Petersburg, Va., for consultation, and on completion *to his proper station*, Lieut.-Col. EDGAR KING.

*To Camp Meade*, Admiral, Md., from New York City, Lieuts. CEDRIC E. FILKINS, ROY T. HASKELL, JOHN C. WOODLAND.

*To Camp Sherman*, Chillicothe, Ohio, for duty, from Camp Beauregard, Lieut. NEWTON W. SENTELL; from Camp Travis, Lieut. JAMES D. EDGAR.

*To Cape May, N. J.*, base hospital, from the Surgeon General's Office, Lieut.-Col. EDWIN C. ELLETT.

*To Fort Oglethorpe* for inspection, and on completion *to his proper station*, Col. WILLIAM H. G. LOGAN.

*To Fort Riley* for duty, from Walter Reed General Hospital, Major ROBERT S. WOODSON.

*To Hoboken, N. J.*, for duty, from Camp McClellan, Major RUGUS H. HAGOOD, Jr.

*To Lakewood, N. J.*, for duty, from Walter Reed General Hospital, Col. CHARLES F. MASON.

*To New York City* for duty, and on completion *to his proper station*, Lieut.-Col. JAMES BORDLEY.

*To report by wire to the commanding general*, Central Department, for assignment to duty, from Canal Zone, Col. SAMUEL M. WATERHOUSE.

*To Waynesville, N. C.*, for duty, and on completion *to his proper station*, Lieut.-Col. EARL H. BRUNS.

*Honorably discharged* on account of physical disability existing prior to entrance into the service, Lieut. SAMUEL E. SIMPSON.

The following order has been revoked: *To Army Medical School* for instruction, from Camp Sevier, Lieut. HARLIN G. TUCKER.

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## ORDERS TO OFFICERS OF THE MEDICAL RESERVE CORPS

### Alabama

*To Camp Devens*, Ayer, Mass., for duty, from New York City, Lieut. DUKE C. BRADFORD, Birmingham.

*To Camp Grant*, Rockford, Ill., for duty, from Camp Sheridan, Major JAMES S. McLESTER, Birmingham.

*To Camp Sheridan*, Montgomery, Ala., base hospital, Lieut. OMER ROAN, Eva.

*To Fort McPherson, Ga.*, for duty, Lieut. ARTHUR McC. COWDEN, Oneonta.

*To Fort Oglethorpe* for instruction, Major HENRY B. WILKINSON, Montgomery; Lieuts. LEWIS A. WINDHAM, Daleville; ROBERT H. SHEPHERD, Jasper; ALFRED B. PICKERING, Lantersville.

*To report by wire to the commanding general*, Southeastern Department for assignment to duty, Lieut. MALCOLM D. SMITH, Prattsville.

*Resignation* of Lieut. THEODORE M. BLAKE, Fruitdale, accepted.

### Arizona

*To Fort Sill, Okla.*, base hospital, Lieut. EARL R. McPHEETERS, Clifton.

### Arkansas

*To Camp Bowie*, Fort Worth, Tex., for duty, from Fort Riley, Lieut. CLAUDE W. DRACE, Piggott.

*To Camp Pike*, Little Rock, Ark., as orthopedic surgeon, from Boston, Lieut. RAYMOND C. WOLFE, Little Rock.

*To Camp Shelby*, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieut. OSCAR BARKSDALE, Bassett.

*To Fort Sam Houston, Texas*, base hospital, from Cape May, Capt. JOHN S. JENKINS, Pine Bluff.

*Honorably discharged* on account of physical disability existing prior to entrance into the service, Lieut. PASCHAL J. PARK, Cabot.

### California

*To Camp Bowie*, Fort Worth, Texas, for duty, from Fort Riley, Lieut. CALVIN A. WALKER, San Francisco.

*To Camp Dodge*, Des Moines, Ia., for duty, from Fort Riley, Capt. HENRY T. ROONEY, Colfax.

*To Camp Fremont*, Palo Alto, Calif., base hospital, from San Francisco, Lieut. CHANNING HALL, Alameda.

*To Camp Jackson*, Columbia, S. C., base hospital, from Camp Fremont, Lieut. EDWIN R. FOUNTAIN, Merced.

*To Camp Kearney*, Linda Vista, Calif., base hospital, Lieut. GEORGE A. BRIGGS, Sacramento. With the board examining the command for nervous and mental diseases, Capt. FRED J. CONZELMANN, Stockton.

*To Camp Lewis*, American Lake, Wash., base hospital, Capt. WILLIAM C. MABRY, Los Angeles; Lieut. JOHN C. WILLIAMS, Fresno. For duty, Capts. WILLIAM H. MAYNE, Los Angeles; FRANK LER. CHAPLINE, Orange; BENJAMIN B. WARD, San Fernando; Lieuts. MARTIN MACAULAY, Monterey; HENNING KOFORD, Oakland; FRED E. KELL, San Bernardino; CORY C. LEDYARD, San Francisco.

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. LESTER C. SCULLY, San Jose.

*To Camp MacArthur*, Waco, Texas, base hospital, Capt. ORLYN S. PHILLIPS, Los Angeles.

*To Camp Pike*, Little Rock, Ark., for duty, from Army Medical School, Lieut. LELAND O. W. MOORE, Alameda.

*To Cape May, N. J.*, base hospital, from Camp Wheeler, Major HOWARD C. NAFFZIGER, San Francisco.

*To Douglas, Ariz.*, camp hospital, Lieut. GEORGE W. REYER, Los Angeles.

*To Fort McDowell, Calif.*, for duty, Lieut. LEWIS O. SELIGMAN, Dinuba.

*To San Francisco, Calif.*, Letterman General Hospital, for temporary duty, Lieut. THOMAS N. CUNNANE, Los Angeles.

*To Tuscon, Ariz.*, University of Arizona, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. ORRA C. HYDE, Lincoln.

*To Whipple Barracks, Ariz.*, for duty, Lieut. JOHN H. MALLERY, La Mesa; from Camp Kearney, Lieut. CHARLES A. SHEPARD, Needles.

### Canal Zone

*To Camp Pike*, Little Rock, Ark., base hospital, Major WILLIAM McC. JAMES, Panama City, Panama.

### Colorado

*To Camp Cody*, Deming, N. M., base hospital, Capt. EDWARD G. GRIFFIN, Lieut. NORBERT H. KNOCH, Denver.

*To Camp Crane*, Allentown, Pa., base hospital, from Hoboken, Lieut. FRANK DUNKLE, Denver.

*To Camp Custer*, Battle Creek, Mich., for duty, from Camp Travis, Lieut. FOREST C. KRACAW, Oak Creek.

*To Camp Dix*, Wrightstown, N. J., as orthopedic surgeon, from Boston, Lieut. JOHN C. HERRICK, Denver.

*To Camp Dodge*, Des Moines, Ia., base hospital, from Camp Cody, Capt. JOHN R. ESPEY, Trinidad.

*To Camp Greene*, Charlotte, N. C., base hospital, from Camp Cody, Capt. WALTER F. CHURCH, Greeley.

*To Fort Oglethorpe* for instruction, Capt. THOMAS LER. A. SHAFFER, Sadila; Lieuts. JAMES McCARROLL, Denver; WALTER T. BRONSON, Pueblo.

*To New Haven, Conn.*, for duty, Capt. WILBUR T. LITTLE, Canon City.

### Connecticut

*To Camp Devens*, Ayer, Mass., base hospital, Capt. EDWARD F. McGOVERN, Bridgeport. For duty, Lieut. MILTON L. DRYFUS, New Haven; from Fort Oglethorpe, Lieut. JULIAN L. BIRDSON, Hartford.

*To Camp Grant*, Rockford, Ill., for duty, from Camp Cody, Lieut. MARK T. SHEEHAN, Wallingford.

*To Camp Hancock*, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. JOHN G. ADAM, Canaan.

*To Camp Jackson*, Columbia, S. C., base hospital, Lieut. CHARLES W. KNAPP, Greenwich.

*To Camp Meade*, Admiral, Md., for duty, from Fort Oglethorpe, Capt. WILLIAM P. BURKE, New Haven.

*To Camp Wheeler*, Macon, Ga., base hospital, from Boston, Lieut. EDWARD B. ALLEN, South Manchester. With the board examining the command for nervous and mental diseases, from Camp Sheridan, Capt. WILLIAM R. MILLER, Southington.

*To Fort Oglethorpe*, base hospital, from Camp Dodge, Lieut. WILLIAM M. STAHL, Danbury. For instruction, Lieut. WILLIAM M. O'CONNELL, West Haven.

*To Hoboken, N. J.*, base hospital, from New York City, Capt. EDWARD E. ROWELL, Stamford.

*To New Haven, Conn.*, for duty, from Newport News, Lieut. SAMUEL H. BRAUDE, Rockville. Yale University, for duty, from the Surgeon-General's Office, Major MILTON C. WINTERNITZ, New Haven.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Greene*, Charlotte, N. C., base hospital, from Fort Oglethorpe, Capt. HENRY G. ANDERSON, Waterbury. Neurological Institute, for intensive training, Lieut. SIDNEY L. RIESER, Middleton.

*To Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion *to Camp Gordon*, Atlanta, Ga., base hospital, Lieut. JOHN G. O'CONNELL, Bridgeport.

*To Washington, D. C.*, for duty in the Surgeon-General's Office, from Camp Sevier, Major JOHN S. DYE, Waterbury.

### Delaware

*To Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion *to Camp Devens*, Ayer, Mass., base hospital, Lieut. JAMES G. SPACKMAN, Wilmington.

### District of Columbia

*To Camp Devens*, Ayer, Mass., as orthopedic surgeon, from Boston, Capt. HARRY L. SCHURMEIER, Washington.

*To Camp Gordon*, Atlanta, Ga., base hospital, Lieut. MELVILLE B. FISCHER, Washington.

*To Camp Jackson*, Columbia, S. C., base hospital, from Camp Travis, Major FREDERICK D. OWSLEY, Washington.

*To Camp Sevier*, Greenville, S. C., as assistant to camp surgeon, from Fort Oglethorpe, Capt. JAMES B. LAUGHLIN, Washington. Base hospital, from Washington, Capt. WALTER A. WELLS, Washington.

*To Fairfield, Ohio*, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. CHARLES W. HYDE, Washington.

*To Fort Oglethorpe* for instruction, Lieut. JACOB KOTZ, Washington.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Dix*, Wrightstown, N. J., base hospital, from Fort Oglethorpe, Lieut. DANIEL W. PRENTISS, Washington.

*To Plattsburg Barracks, N. Y.*, for duty, Lieut. CLARENCE A. NEYMANN, Washington.

*To Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion *to Camp Upton, L. I., N. Y.*, base hospital, Capt. LEE P. KAULL, Washington.

*To Washington, D. C.*, St. Elizabeth's Hospital, for intensive training, Lieut. ELMER B. M. CASEY, Washington.

### Florida

*To Camp Joseph E. Johnston*, Jacksonville, Fla., as orthopedic surgeon, from Boston, Lieut. LELAND F. CARLTON, Tampa.

*To Fort Oglethorpe* for instruction, Lieuts. ROBERT L. MILLER, Deland; MOZART A. LISCHKOFF, Pensacola.

### Georgia

*To Camp Dodge*, Des Moines, Ia., for duty, from Army Medical School, Lieut. HARVEY W. SNYDER, Atlanta.

*To Camp Forrest*, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Capt. WILLIAM E. McCURRY, Hartwell.

*To Camp Sheridan*, Montgomery, Ala., base hospital, Lieut. MARCELLUS F. COCHRAN, Barnesville.

*To Camp Sherman*, Chillicothe, Ohio, base hospital, from Camp Shelby, Lieut. JESSE L. MEEKS, Atlanta.

*To Camp Wadsworth*, Spartanburg, S. C., base hospital, Capts. ARTHUR P. FLOWERS, GEORGE C. MIZELL, Atlanta.

*To Cape May, N. J.*, base hospital, Lieut. GRADY E. CLAY, Atlanta.

*To Fort Oglethorpe* for instruction, Major THOMAS S. CLAY, Savannah; Capts. GUY CHAPPELL, Dawson; JOHN B. RUDOLPH, Gainesville; Lieuts. ROBERT B. LAMB, Demorest; JAMES A. THRASH, Greenville; JAMES M. HARTLEY, Jeffersonville; DICK R. LONGINO, Rex; CHARLES USHER, Savannah; CONRAD L. ALLGOOD, Scottdale; JESSE E. D. ISBELL, Toccoa.

*To report by wire to the commanding general*, Southern Department, for assignment to duty, Capt. OSCAR G. CRANFORD, Sasser.

*To Rockefeller Institute* for instruction in bacteriology, and on completion *to Army Medical School* for duty, Lieut. RUSSELL F. WILSON, Atlanta. For instruction in the treatment of infected wounds, and on completion *to Fort McPherson, Ga.*, for temporary duty, Capt. GEORGE P. HUGULEY, Atlanta.

*To Sacramento, Calif.*, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. JOHN H. HALL, Atlanta.

*Honorably discharged* on account of physical disability existing prior to entrance into the service, Lieuts. GEORGE H. NOBLE, JR., Atlanta; OSCAR W. DEVAUGHN, Manchester.

*Resignation* of Lieut. SOLOMON YOUMANS, Normantown, accepted.

### Idaho

*To Camp Cody*, Deming, N. M., base hospital, from San Francisco, Capt. CHARLES H. SPRAGUE, Pocatello.

*To Camp Dodge*, Des Moines, Ia., for duty, from Fort Riley, Capt. LOUIS J. PERKINS, Lewiston.

*To Camp Lewis*, American Lake, Wash., for duty, Lieut. CHARLES H. BRYAN, Kamiah.

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. JAMES F. MILLER, Inkom.

## Illinois

*To Buffalo, N. Y.*, Technical High School, to make physical examinations and give medical attention to drafted men and on completion *to his proper station*, from Fort Oglethorpe, Lieut. ANTHONY T. WEBER, Chicago.

*To Camp Cody*, Deming, N. M., base hospital, from Fort Riley, Capt. DAVID H. KELLER, Winnetka.

*To Camp Custer*, Battle Creek, Mich., base hospital, Capt. LEROY H. DAGGETT, Wilmette. For duty from Fort Des Moines, Lieut. RALPH C. SULLIVAN, Chicago.

*To Camp Devens*, Ayer, Mass., for duty, from Army Medical School, Lieuts. CARL W. CLARK, THOMAS S. McCLANAHAN, WILLARD H. WATEROUS, RALPH G. WILLY, Chicago; from Fort Oglethorpe, Lieut. CLYDE D. GULICK, Urbana; from New York City, Lieut. CARL B. HERRMANN, Chicago.

*To Camp Doniphan*, Fort Sill, Okla., base hospital, Capt. JOHN C. FOLEY, Waukegan.

*To Camp Gordon*, Atlanta, Ga., for orthopedic instruction, and on completion *to Fort McPherson, Ga.*, for further instruction, from Fort Oglethorpe, Lieut. CALVIN M. DEBECK, Chicago.

*To Camp Grant*, Rockford, Ill., base hospital, Capt. CHARLES C. CLARK, Chicago; from Camp Dodge, Lieuts. LYNN W. ELSTON, ALBERT VANDERKLOOT, Chicago. For duty, Lieut. EDWIN P. McLEAN, Marca.

*To Camp Hancock*, Augusta, Ga., for duty, from Fort Oglethorpe, Capt. HENRY M. VAN HOOK, Mt. Pulaski.

*To Camp Logan*, Houston, Texas, as orthopedic surgeon, from Boston, Lieut. NELSON H. LOWRY, Jr., Chicago. Base hospital, from Fort Riley, Capt. SAMUEL D. NIXON, Chicago. For duty, from Fort Oglethorpe, Capt. LOGAN O. HAMILTON, Roodhouse; from Fort Riley, Lieut. RUSSELL R. TOMLIN, San Jose.

*To Camp MacArthur*, Waco, Texas, for duty, from Fort Oglethorpe, Lieut. TULLY O. HARDESTY, Jacksonville.

*To Camp Meade*, Admiral, Md., for duty, from Army Medical School, Lieut. EARLE K. HALLOCK, Chicago; from New York City, Lieuts. ARTHUR E. ROGERS, Bloomington; FRANK T. DUFFY, Chicago.

*To Camp Shelby*, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieut. TOM F. BEVERIDGE, Chicago.

*To Camp Sheridan*, Montgomery, Ala., base hospital, Lieut. JOHN T. BROSNAN, Chicago.

*To Camp Upton, L. I., N. Y.*, base hospital, from Fort Oglethorpe, Capt. ANDY HALL, Mount Vernon.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieuts. LESTER A. SMITH, JOHN E. STANTON, HARRY T. SWANSON, Chicago; LUTHER R. MOORE, McLeansboro; from Fort Oglethorpe, Capt. CHARLES E. SHULTZ, Shirley.

*To Cape May, N. J.*, base hospital, from Camp Meade, Lieut. HERMON H. COLE, Springfield.

*To Fort Bliss, Texas*, base hospital, from Camp Sheridan, Capt. GEORGE C. SHOCKEY, Melrose Park.

*To Fort Des Moines, Ia.*, base hospital, from Camp Dodge, Capt. SAMUEL M. EDISON, Chicago.

*To Fort McPherson, Ga.*, for duty, from New York City, Lieut. FRED McK. MILLER, Chicago.

*To Fort Oglethorpe* for instruction, Capts. JOHN A. KAPPLEMAN, Chicago; CHRISTIAN H. ZOLLER, Litchfield; WILLIAM A. RIBBECK, Oak Park; Lieuts. WESLEY W. KUNTZ, Baylis; JOSEPH C. MOORE, Brimfield; WM. H. CONSER, Cambridge; WILLIAM BURK, STEVEN J. CONWAY, CHARLES W. GLOVER, PAUL M. HUNTER, DONALD E. MacGREGOR, WILLIAM H. MILLER, RICHARD A. ROCHE, PASHUAPATI J. SARMA, Chicago; ALEXANDER B. TAYLOR, Cobden; HENRY M. WILSON, Granville; WELDON B. KILTON, Harvel; HOWARD C. EMONS, Marissa; SAMUEL W. COFFMAN, Maywood; RAYMOND J. JOSEPH, New Athens; JESSE M. HOYT, Nokomis.

*To Fort Riley* for instruction, from Camp Dodge, Lieut. THOMAS A. CARTER, Chicago.

*To Fort Sill, Okla.*, base hospital, Capts. GEORGE E. THOMPSON, Chicago; JOHN C. FOLEY, Waukegan; from Camp Dodge, Lieut. HOWARD T. KNIGHT, Elgin. For duty, from Fort Riley, Lieut. BURTON W. BIVINS, Oak Park.

*To Grand Forks, N. D.*, North Dakota School of Mines, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. JESSE H. McINTOSH, Chambersburg.

*To Hoboken, N. J.*, for duty, from Camp Custer, Major GEORGE F. SUKER, Chicago; from Fort Oglethorpe, Lieut. EMANUEL M. FAINER, West Frankford; from Richmond, Lieut. JOSEPH M. KNOCHEL, Lincoln.

*To Jackson Barracks, La.*, with the board examining the command for nervous and mental diseases, from Camp Sheridan, Capt. WILSON K. DYER, Kankakee.

*To Lake Charles, La.*, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. FRANK CARY, Chicago.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp Hancock, Lieut. HARRY P. REUSS, Granite City. On completion *to Camp Sheridan*, Montgomery, Ala., base hospital, from Fort Oglethorpe, Lieut. EVAN H. N. GRIFFITHS, Chicago. Orthopedic Hospital, for instruction, from Boston, Capt CLAUDE R. G. FORRESTER, Chicago.

*To report by wire to the comanding general*, Central Department, for assignment to duty, Capt. JAMES W. VANDERSLICE, Oak Park.

*To Washington D. C.*, for duty in the Surgeon-General's Office, Major ALBERT J. OCHSNER, Chicago.

*Honorably discharged*, Capt. EDWARD F. WELLS, Chicago.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. JAMES STEVENSON, Chicago.

## Indiana

*To Camp Beauregard*, Alexandria, La., base hospital, Lieut. HOWARD H. JONES, Salmonia.

*To Camp Devens*, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. CARL HENNING, Hanover.

*To Camp Gordon*, Atlanta, Ga., base hospital, Lieut. AUBREY L. LOOP, Economy.

*To Camp Hancock*, Augusta, Ga., for duty, from Fort Oglethorpe, Capt. HARRY H. THOMPSON, Noblesville.

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. ARTHUR L. LEEDS, Michigan City.

*To Camp Shelby*, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieut. ROBERT G. JOHNSTON, Markle.

*To Camp Stanley*, Leon Springs, Texas, as orthopedic surgeon, from Boston, Lieut. MERRILL S. DAVIS, Marion.

*To Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieuts. ERLE O. DANIELS, Marion; COL. C. MACKEY, Whiting.

*To Columbia, S. C.*, University of South Carolina, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. HARVEY K. STORK, Huntingburg.

*To Edgewood, Md.*, base hospital, Capt. JOSEPH L. ALLEN, Greenfield.

*To Fort Oglethorpe* for instruction, Capts. IRWIN W. DITTON, Fort Wayne; WM. CULLEN SQUIER, Milton; JOHN S. SPRAGUE, North Liberty; ARTHUR LeR. KNAPP, South Bend; JULIUS C. BOHN, Terre Haute; Lieuts. HARRY H. DEES, Bickwell; JOSEPH KENTLING, Bloomington; EUGENE W. MITCHELL, Cannellton; ARCHIE S. BROWN, Clay City; WILLIAM C. LANDIS, Claypool; FAYE O. SCHENCK, Crawfordsville; STERLING P. HOFFMAN, Decatur; GEORGE M. SHEWALTER, Ellwood; GEORGE B. THOMAS, Greenfield; HARRISON A. WALKER, Indianapolis; ALFRED A. THOMPSON, Tyner.

*To report by wire to the commanding general*, Central Department, for assignment to duty, Lieut. SAMUEL L. LINGLE, Paoli.

*To Washington, D. C.*, Elizabeth's Hospital, for intensive training, Lieut. EDWARD H. SCHLEGEL, Fort Wayne.

## Iowa

*To Boulder, Colo.*, University of Colorado, to make physical examinations and give medical attention to drafted men, from Fort Riley, Lieut. LEONARD J. BOWMAN, Masonville.

*To Camp Dodge*, Des Moines, Iowa, as orthopedic surgeon, from Boston, Lieut. THEODORE A. WILLIS, Iowa City.

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. IRVIN J. SINN, Williamsburg.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Major HAROLD A. SPILMAN, Ottumwa; Lieut. DONALD H. PITTS, Mondamin.

*To Fort Oglethorpe* for instruction, Major PHILIP B. McLAUGHLIN, Sioux City; Capts. PAUL H. SCHAEFER, Burlington; HERBERT M. DECKER, Davenport; Lieuts. JOHN D. CANTWELL, Davenport; LYSLE C. HOWE, JAMES W. WILSON, Milton; EARL R. LEONARD, Rock Valley.

*To Fort Riley*, with the board examining the command for nervous and mental diseases, from Camp Bowie, Lieut. PERCY B. BATTEY, Independence.

*To Fort Wadsworth, N. Y.*, for temporary duty, and on completion to his proper station, from New Haven, Lieut. MILTON D. JEWELL, Decorah.

*To Newport News, Va.*, for duty, from Fort Riley, Lieut. JOSEPH W. B. FLAGEOLLE, Sioux City.

## Kansas

*To Camp Bowie*, Fort Worth, Texas, with the board examining the command for nervous and mental diseases, from San Antonio, Lieut. GEORGE E. HESNER, Topeka.

*To Camp Dodge*, Des Moines, Iowa, as orthopedic surgeon, from Boston, Lieut. WILLIAM G. BOUSE, Centralia. For duty, from Fort Riley, Lieut. JESSE W. BARKER, Chanute.

*To Camp Gordon*, Atlanta, Ga., base hospital, from Army Medical School, Lieut. ROY W. LAYTON, Kansas City; from Fort Riley, Capt. JAMES W. MAY, Kansas City.

*To Camp Logan*, Houston, Texas, base hospital, Lieut. WILLIAM LAPAT, Larned.

*To Camp Meade*, Admiral, Md., for duty, from Army Medical School, Lieut. ROY W. LAYTON, Kansas City; from New York City, Lieut. CASPER J. MIDDLEKAUFF, Hays.

*To Fort Oglethorpe* for instruction, Capt. HENRY G. SNYDER, Seneca; Lieuts. LEWIS D. MILLS, Greeley; WILLIAM L. BUTLER, Stafford; NED D. MILLER, Topeka; FORREST J. AUSTIN, White Cloud.

## Kentucky

*To Camp Devens*, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. WILLIAM T. LITTLE, Calvert City.

*To Camp Gordon*, Atlanta, Ga., for orthopedic instruction, and on completion *to Fort McPherson, Ga.*, for further instruction, from Fort Oglethorpe, Lieut. WILLIAM G. ECKMAN, Covington.

*To Camp Shelby*, Hattiesburg, Miss., base hospital, Lieut. CASWELL C. TURNER, Glasgow.

*To Camp Wheeler*, Macon, Ga., base hospital, Capt. JAMES U. RIDLEY, Robards.

*To Fort Oglethorpe* for instruction, Capt. WILLIAM C. CAYWOOD, Winchester; Lieuts. WILLIAM A. NOBLE, Covington; DALTON H. RAY, Dublin; CARLISLE R. PETTY, Louisville; JAMES ARTHUR KIRK, Philpot; ROBERT C. SIEVERS, Pine Knot.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Meade*, Admiral, Md., base hospital, Lieut. WILLIAM C. KUNKLER, Louisville.

## Louisiana

*To Camp Hancock*, Augusta, Ga., for duty, from Fort Oglethorpe, Lieut. GEORGE F. ROELING, New Orleans.

*To Camp Shelby*, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieut. CHARLES B. LAW, Pelican.

*To Fort McPherson, Ga.*, for temporary duty, Lieut. EDWARD L. KING, New Orleans.

*To Fort Oglethorpe* for instruction, Lieut. EUGENE B. MIDDLETON, Heflin.

*To Hoboken, N. J.*, base hospital, from Camp Shelby, Lieut. FRANK CHETTA, New Orleans.

## Maine

*To Camp Jackson*, Columbia, S. C., base hospital, from Fort Oglethorpe, Capt. HENRY M. CHAPMAN, Bangor.

*To Camp Upton, L. I., N. Y.*, base hospital, Capt. ALBION H. LITTLE, Portland.

*To Richmond, Va.*, for consultation, and on completion *to his proper station*, from Camp Lee, Major TALCOTT O. VANAMEE, Portland.

*To Rockefeller Institute* for instruction in bacteriology, from Camp Upton, Capt. LESTER ADAMS, Bangor.

## Maryland

*To Army Medical School* for instruction, Lieut. JOHN L. DORSEY, Baltimore.

*To Camp Crane*, Allentown, Pa., base hospital, from Camp Sheridan, Major HENRY O. REIK, Baltimore.

*To Camp Devens*, Ayer, Mass., for duty, From Fort Oglethorpe, Lieut. FRANCIS X. KEARNEY, Baltimore.

*To Camp Jackson*, Columbia, S. C., base hospital, Lieut. JOSEPH T. NELSON, Baltimore.

*To Camp Sevier*, Greenville, S. C., base hospital, from Camp Upton, Lieut. PHILIP PEARLSTEIN, Baltimore.

*To Fort Oglethorpe* for instruction, Lieuts. FRANCIS E. ROBERTS, Baltimore; FRANKLIN PIERCE SNODGRASS, Darlington.

*To Fort Riley* with the board examining the command for nervous and mental diseases, from Camp Sevier, Lieut. JOSEPH P. EDISON, Baltimore.

*To New York City* for duty, and on completin *to his proper station*, from Washington, Major ROBERT T. TAYLOR, Baltimore.

*To Philadelphia, Pa.*, Spring Garden Institute, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. MOSES L. LICHTENBERG, Baltimore.

*To Troy, N. Y.*, Troy Central High School, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. ALBERT L. WILKINSON, Raspeburg.

### Massachusetts

*To Camp A. A. Humphreys*, Accotink, Va., with the board examining the troops for cardiovascular diseases, from Camp Hancock, Lieut. HARRY A. WALKER, Somerville.

*To Camp Crane*, Allentown, Pa., for duty, Capt. CHARLES E. THOMPSON, Fair Haven.

*To Camp Devens*, Ayer, Mass., base hospital, Lieut. ALTON J. CHOATE, Gloucester.

*To Camp Gordon*, Atlanta, Ga., base hospital, from Army Medical School, Lieut. WILLIAM F. GREANEY, Holyoke. With the board examining the command for nervous and mental diseases, and on completion *to his proper station*, from Camp McClellan, Lieut. BUELL L. ASHMORE, Palmer.

*To Camp Grant*, Rockford, Ill., with the board examining the command for nervous and mental diseases, from Camp McClellan, Capt. HEIMAN CARO, Palmer.

*To Camp Lee*, Petersburg, Va., base hospital, Capt. JOHN L. LOUGEE, Boston. With the board examining the command for nervous and mental diseases, and on completion *to his proper station*, from Camp Meade, Lieuts. RAYMOND K. FOXWELL, Cambridge; MARTIN W. PECK, Marblehead.

*To Camp Meade*, Admiral, Md., base hospital, Lieut. HERBERT E. MAYNARD, Winchester. For duty, from Fort Oglethorpe, Capt. WILLIAM J. HAMMOND, Boston.

*To Camp Sevier*, Greenville, S. C., base hospital, Capt. ERNEST L. HUNT, Worcester.

*To Camp Shelby*, Hattiesburg, Miss., with the board examining the command for nervous and mental diseases, from Camp Logan, Lieut. FRANCIS S. CALDICOTT, Milford.

*To Camp Sherman*, Chillicothe, Ohio, base hospital, from Camp Shelby, Lieut. MANUEL F. GUNHA, Boston.

*To Camp Upton, L. I., N. Y.*, base hospital, Major IRVING P. LYON, South Duxbury. For duty, from Army Medical School, Lieut. WILLIAM F. GREANEY, Holyoke.

*To Camp Wadsworth*, Spartanburg, S. C., base hospital, from Fort Sam Houston, Lieut. GEORGE H. BIGELOW, Boston.

*To Fort Oglethorpe* for consultation, and on completion *to Fort McPherson, Ga.*, for consultation, and on completion *to his proper station*, Major ALEXANDER S. BEGG, Boston. Base hospital, from Camp Custer, Capt. SEARLE B. MARLOW, Boston. For instruction, Capts. ROBERT B. SCALES, Dorchester; HOWARD B. JACKSON, Melrose; JOSEPH W. KELLEY, Worcester; Lieuts. DANIEL F. MURPHY, Beverly; NATHAN ROSENBERG, Boston; JOHN E. CONNELLY, Brookline; FRANK W. CRAWFORD, Holbrook; THOMAS A. SHAUGHNESSY, Loominster; ALFRED F McALPHINE, Somerville; WARREN D. RUSTON, West Somerville.

*To Fort Warren, Mass.*, for duty, Capt. GILMAN L. CHASE, Clinton.

*To Madison, Wis.*, for duty, Lieut. VICTOR C. JACOBSON, Boston.

*To Mineola, L. I., N. Y.*, Signal Corps Aviation School, for duty, from Houston, Capt. JOHN G. JENNINGS, Boston.

*To New Haven, Conn.*, for duty, Lieut. ERNEST D. PILLSBURY, West Somerville.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Gordon*, Atlanta, Ga., base hospital, Lieut. ROBERT I. WALKER, New Bedford. Boys' Vocational School, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Capt. BERNARD RABINOVITZ, Springfield. Hospital for Ruptured and Crippled, for instruction, from Boston, Lieut. CLARENCE H. HYMAN, Salem.

*To report by wire to the commanding general*, Northeastern Department, for asignment to duty, Capts. CORNELIUS A. AHEARNE, Jr., Salem; CORNELIUS P. HARKINS, Westfield.

*To Richmond, Va.*, Richmond and Westhampton Colleges, for temporary duty, Capt. GEORGE L. TOBEY, Jr., Boston.

*To Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion *to Williamsbridge, N. Y.*, for temporary duty, Capts. FRANK H. LAHEY, Boston; THOMAS F. CARROLL, Brookline.

The following order has been revoked: *To Camp Wheeler*, Macon, Ga,. base hospital, Lieut. LOUIS STRAHLMANN, Boston.

### Michigan

*To Camp Dodge*, Des Moines, Iowa, for duty, from Fort Riley, Capt. EMIL P. W. RICHTER, Saginaw.

*To Camp Gordon*, Atlanta, Ga., base hospital, Lieut. DAMON O. WALTHALL, Ann Arbor. For orthopedic instruction, and on completion *to Fort McPherson, Ga.*, for further instruction, from Fort Oglethorpe, Capt. LUCIUS A. FARNHAM, Pontiac; Lieut. HENRY R. LEIBINGER, Detroit.

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. ARTHUR TURNER, Detroit.

*To Camp Meade*, Admiral, Md., for duty, from Fort Oglethorpe, Lieut. AUSTIN W. HEINE, Mount Clemens.

*To Camp Pike*, Little Rock, Ark., for duty, from Fort Sill, Lieut. CLAYTON A. WHITE, Burnips.

*To Camp Sevier*, Greenville, S. C., base hospital, Capt. ALLAN W. McDONALD, Detroit.

*To Camp Shelby*, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieut. VICTOR F. RYAN, Detroit.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. ARTHUR V. MURTHA, Flint; from Fort Oglethorpe, Lieuts. ALFRED H. RADZINSKI, Detroit; WALTER VAN DE ERVE, Norway; from Williamsbridge, Lieut. AARON L. CHAPMAN, Detroit.

*To Fort Oglethorpe* for instruction, Capts. MARTIN J. SCHWANS, Detroit; HARRY W. LONG, Escanaba; Lieuts. DUFFIELD R. KRUGER, Detroit; WILLIAM H. LAKE, Grass Lake.

*To Hoboken, N. J.*, for duty, from Fort Oglethorpe, Lieut. MAURICE J. CROSS, Delton.

*To Mesilla Park, N. M.*, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. GEORGE L. KOESSLER, Detroit.

*To Mount Clemens, Mich.*, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. GEORGE E. FROTHINGHAM, Detroit.

*To Plattsburg Barracks, N. Y.*, for duty, Lieuts. SYLVESTER L. BALLARD, Auburn; GUY C. CONKLE, Bayne Falls; ARTHUR B. EGAN, Muskegon; LEROY E. GIBSON, Oxford.

*Honorably discharged*, Lieut. DANIEL J. LEITHAUSER, Detroit.

### Minnesota

*To Camp Custer*, Battle Creek, Mich., for duty, from Camp Pike, Lieut. HAROLD L. GOSS, Minneapolis.

*To Camp Dodge*, Des Moines, Iowa, base hospital, Capts. WILLIAM H. EATON, Duluth; WILLIAM W. LEWIS, St. Paul. For duty, from Fort Riley, Lieuts. JOHN STEVENS, Gonvick; HENRY E. DOUGLAS, Hutchinson; from Fort Sill, Capt. ARTHUR L. CLUDAS, Minneapolis.

*To Camp Grant*, Rockford, Ill., for duty, from Camp Sheridan, Lieut. WALTER E. GREMPLER, Minneapolis. With the board examining the command for nervous and mental diseases, Capt. CHARLES R. BALL, St. Paul.

*To Camp Pike*, Little Rock, Ark., with the board examining the command for nervous and mental diseases, from Camp Upton, Lieut. FREDERICK P. MOERSCH, Minneapolis.

*To Camp Wadsworth*, Spartanburg, S. C., base hospital, Lieut. SAMUEL O. BLACK, Rochester; from Camp Pike, Lieut. CHARLES H. CHERRY, Chisholm.

*To Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. HARRY C. McINTOSH, St. Paul. For duty, from Army Medical School, Lieut. DONALD H. PITTS, Minneapolis.

*To Fairfield, Ohio*, Signal Corps Aviation School, for duty, from Mineola, Lieut. ROY C. LOWE, Fairmont.

*To Fort Oglethorpe*, for instruction, Capt. JAMES F. LYNN, Waseca; Lieuts. CLAUDE W. WOODRUFF, Chatfield; ROLF HOODE, Duluth; FREDERICK W. FRANCHERE, Lake Crystal; JOSEPH M. HALL, Minneapolis.

*To Fort Sill, Okla.*, for duty, from Fort Riley, Lieut. HENRY I. TWISS, St. Paul.

*To Jefferson Barracks, Mo.*, for duty, from Fort Riley, Lieut. AXEL W. SWEDENBURG, Gully.

*To New Haven, Conn.*, for duty, Capt. JAMES N. ELLIOTT, Minneapolis.

*To Newport News, Va.*, for duty, from Fort Riley, Lieut. HARRY B. WEINBURGH, Waterville.

*To New York City*, Hospital for Ruptured and Crippled, for instruction, from Boston, Lieut. PIO BLANCO, Rochester.

*To report by wire to the commanding general*, Central Department, for assignment to duty, Capts. ROLLIN T. ADAMS, Mantorville; ALLAN B. STEWART, Owatonna.

*To report to the commanding general*, Philippine Department, for duty, from Camp Shelby, Major WALTER H. DARLING, Minneapolis.

*To report to the Surgeon-General of the Army* for duty, Major LEONARD G. ROWNTREE, Minneapolis.

*To Washington, D. C.*, for temporary duty, from Camp Dodge, Lieut. WALTER E. CAMP, Minneapolis.

The following order has been revoked: *To Fort Bliss, Texas*, base hospital, from Washington, Capt. WILLIAM R. WOODBURY, Rochester.

### Mississippi

*To Camp Travis*, Fort Sam Houston, Texas, base hospital, Capt. LEONIDAS H. MARTIN, Hattiesburg.

*To Fort Oglethorpe* for duty, from Camp Logan, Lieut. JOHN L. WHITE, Sarah. For instruction, Lieuts. ARTHUR M. SHAEFFER, Jackson; ERNEST C. ROUSE, Kosciusko.

*To New Haven, Conn.*, for duty, Capt. THOMAS D. BOURDEAUX, Meridian.

*To San Francisco, Calif.*, Letterman General Hospital, for observation and treatment, from San Diego, Lieut. WILLIAM L. NEWTON, New Albany.

### Missouri

*To Camp Bowie*, Fort Worth, Texas, for duty, from Fort Riley, Capt. JAMES F. COOPER, Hannibal; Lieut. CADWALLADER H. ATCHISON, Waldron.

*To Camp Dodge*, Des Moines, Iowa, for duty, from Army Medical School, Lieut. CHARLES H. OZIAS, Kansas City.

*To Camp Fremont*, Palo Alto, Calif., with the board examining the command for nervous and mental diseases, Lieut. GEORGE L. HARRINGTON, Independence.

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. HENRY T. O'KELLEY, Patton.

*To Camp McClellan*, Anniston, Ala., base hospital, from Fort Porter, Capt. WILLIAM T. PATTERSON, Shelbina.

*To Camp Pike*, Little Rock, Ark., base hospital, Lieut. MAX GOLDMAN, Kansas City.

*To Camp Wadsworth*, Spartanburg, S. C., base hospital, from Camp Jackson, Lieut. BRADFORD F. DEARING, St. Louis.

*To Camp Zachary Taylor*, Louisville, Ky., base hospital, Lieut. HERBERT S. MAXWELL, Hopkins.

*To Colonia, N. J.*, for temporary duty, from Camp Doniphan, Capt. RALPH E. NIEDRINGHAUS, St. Louis.

*To Fort Oglethorpe* for duty, Lieut. GEORGE A. TELFER, St. Louis. For instruction, Capt. CHARLES W. BERTRAM, St. Joseph; Lieuts. SHIELDS W. FAIR, Belton; LINCOLN I. PIERCE, Independence; WILLIAM H. HINES, Kansas City; WALLACE E. MATLOCK, Kennett; MINOR F. SEWELL, Malta Bend; ARCH KIRKHAM, Orrick; WILLIAM H. DUCKWORTH, St. Clair; STEPHEN R. COLEMAN, THOMAS T. HOXSEY, St. Louis; ALBERT W. EBELING, Warrentown.

*To Fort Sill, Okla.*, base hospital, from Fort Oglethorpe, Lieut. JAMES L. DOWNING, Oak Grove.

*To Fort Thomas, Ky.*, for duty, from Fort Riley, Lieut. MILLER O. COOMBS, Joplin.

*To Hampton, Va.*, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. FREDERICK C. SIMON, St. Louis.

*To Houston, Texas*, Signal Corps Aviation School, as flight surgeon, from Mineola, Capt. THEODORE S. BLAKESLEY, Kansas City.

*To Montgomery, Ala.*, Signal Corps Aviation School, as flight surgeon, from Mineola, Lieut. JOHN H. TIMBERMAN, Marston.

*To New Haven, Conn.*, for duty, Capt. PHREEBORN G. PAUGH, St. Louis; Lieut. FRANK JAMES, Sheldon.

*To report by wire to the commanding general*, Central Department, for assignment to duty, Capt. ARTHUR R. McCOMAS, Sturgeon.

*To Washington, D. C.*, for duty in the Surgeon-General's Office, from St. Louis, Major HANAU W. LOEB, St. Louis.

*To Whipple Barracks, Ariz.*, for duty, from Fort Riley, Capt. GAIL D. ALLEE, Lamar.

*Honorably discharged*, Lieut. FELIX COHEN, Kansas City. On account of physical disabilty existing prior to entrance into the service, Capt. SIMON W. WOLTZEN, Clinton.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Lieut. NATHAN ZOGLIN, Kansas City.

### Montana

*To Camp Cody*, Deming, N. M., as orthopedic surgeon, from Boston, Lieut. ARTHUR A. HUSSER, Bingham.

*To Camp Grant*, Rockford, Ill., as orthopedic surgeon, from Boston, Lieut. JOHN W. OLSON, Troy.

*To Camp Lewis*, American Lake, Wash., for duty, Capt. ELMER L. SUTHERLAND, Sheridan; Lieuts. DRURA CLAIBORN, Big Timber; CHARLES E. BELTZER, Washoe.

### Nebraska

*To Brownsville, Texas*, base hospital, from Camp Travis, Lieut. JOSEPH ANTONY, Omaha.

*To Camp Bowie*, Fort Worth, Texas, base hospital, from Camp Grant, Capt. HARRY R. CARSON, Norfolk.

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Capt. FINDLEY J. McRAE, Albion.

*To Camp Sevier*, Greenville, S. C., for duty, from New York City, Capt. JOHN R. BEATTY, Butte.

*To Camp Travis*, Fort Sam Houston, Texas, base hospital, Major JOHN M. MAYHEW, Lincoln.

*To Camp Wadsworth*, Spartanburg, S. C., base hospital, from Camp Zachary Taylor, Capt. SAMUEL J. STEWART, Hastings.

*To Fort Oglethorpe* as instructor, from Camp Sevier, Capt. WILLIAM N. ANDERSON, Omaha. For instruction, Capts. ELI B. HAMEL, Hastings; ROYAL SCUDDER, Naimo; JAMES A. TROWBRIDGE, Superior; Lieut. HAROLD E. WHITE, Swanton.

*To Fort Sill, Okla.*, base hospital, Capt. ELMER K. PORTER, Omaha.

*To Indianapolis, Ind.*, Chamber of Commerce, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. WILLIAM H. PHILLIPS, Carroll.

*To Whipple Barracks, Ariz.*, for duty, from Fort Riley, Lieut. FRANCIS J. STEJSKAL, Crete.

### Nevada

*To Camp Meade*, Admiral, Md., for duty, Lieut. SAMUEL B. BYINGTON, Reno.

### New Hampshire

*To Camp Joseph E. Johnston*, Jacksonville, Fla., base hospital, from Camp Shelby, Lieut. RALPH S. PERKINS, Exeter.

*To Camp Pike*, Litle Rock, Ark., with the board examining the command for nervous and mental diseases, from Camp Gordon, Capt. HOWARD W. CLEASBY, Lancaster.

*To Camp Travis*, Fort Sam Houston, Texas, with the board examining the command for nervous and mental diseases, from Camp Sheridan, Lieut. GOODWIN A. JOHNSON, Concord.

*To Camp Wheeler*, Macon, Ga., base hospital, from Camp Shelby, Lieut. LOUIS F. FALLON, St. Anthony.

*To Fort Oglethorpe* for instruction, Lieut. BURTON D. THORPE, Newport.

### New Jersey

*To Bayonne, N. J.*, Board of Education, Public School No. 2, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Capt. PALMER A. POTTER, East Orange.

*To Camp Devens*, Ayer, Mass., base hospital, Lieut. JOHN J. O'CONNOR, West Hoboken. For duty, from Fort Oglethorpe, Lieut. HENRY H. TOMLIN, Wildwood.

*To Camp Hancock*, Augusta, Ga., base hospital, Lieut. EDWARD LER. MINARD, East Orange.

*To Camp McClellan*, Anniston, Ala., base hospital, Lieut. WILLIAM G. SHEMELEY, Jr., Camden.

*To Camp Wadsworth*, Spartanburg, S. C., base hospital, from Camp Sherman, Capt. HAROLD I. GOSLINE, Trenton.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. RAWLEY W. WARD, Carneys Point.

*To Fort Oglethorpe* for instruction, Major C. E. SUTPHEN, Newark; Capt. HARRY G. MACDONALD, Hackensack; Lieuts. PHILIP KRESCH, Bayonne; PERCY R. McFEELY, Bogota; MAX KUMMEL, Harrison; CHARLES P. DE FUCCIO, Jersey City; THOMAS J. KELLY, WILLIAM A. TANSEY, Newark; MICHAEL SARLA, Paterson; ABRAHAM OCKENE, West Hoboken.

*To Fort Riley*, base hospital, from Camp Logan, Capt. DENNIS F. O'CONNOR, South Orange.

*To Memphis, Tenn.*, Signal Corps Aviation School, for duty, from Mineola, Capt. FERDINAND G. ANGENY, Avon-by-the-Sea.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Devens*, Ayer, Mass., base hospital, from Fort Oglethorpe, Lieut. DAVID C. THOMPSON, Bloomfield.

*To South Baltimore, Md.*, for duty, from Fort Oglethorpe, Lieut. HARVEY W. HARTMAN, Keyport.

*Honorably discharged* on account of physical disability existing prior to entrance into the service, Lieut. ISADOR H. FRANKLIN, Jersey City.

### New Mexico

*To Camp Logan*, Houston, Texas, for duty, from Fort Riley, Lieut. HERBERT H. GALLATIN, Lovingston.

*To Fort Bayard, N. M.*, for duty, from Camp Cody, Capt. FRED A. DILLON, Clovis.

*To Mineola, L. I., N. Y.*, Signal Corps Aviation School, for duty, from Camp Kelly, Capt. WILLIAM MACLAKE, Siver City.

*To Rapid City, S. D.*, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. ETHAN ST. C. MILFORD, Albuquerque.

### New York

*To Camp A. A. Humphreys*, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. RAYMOND G. BELL, Binghamton.

*To Camp Crane*, Allentown, Pa., to examine the command for nervous and mental diseases, Capt. EDWARD A. SHARP, Buffalo.

*To Camp Custer*, Battle Creek, Mich., base hospital, Major JOSEPH B. BISSELL, New York City. For duty, from Camp Dodge, Lieut. WILLIAM P. SWEENY, Saratoga Springs; from Camp Wadsworth, Lieut. ISAAC E. GREENBERG, Brooklyn; from Fort Des Moines, Major PERCY H. WILLIAMS, New York City.

*To Camp Devens*, Ayer, Mass., base hospital, Capt. RAY A. EDSON, Buffalo. For duty, from Army Medical School, Lieut. MICHAEL G. HEALY, New York. With the board examining the troops for cardiovascular diseases, from Camp Sevier, Capt. MARCUS A. ROTHSCHILD, New York City.

*To Camp Dix*, Wrightstown, N. J., for duty, from Camp Upton, Lieut. RALPH D. REID, New York. With the board examining the command for nervous and mental diseases, Lieut. RAY W. MOODY, Middletown.

*To Camp Dodge*, Des Moines, Iowa, for duty, from Washington, Capt. STEWART S. PIPER, Elmira.

*To Camp Forrest*, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. GEORGE C. BARONE, Buffalo.

*To Camp Gordon*, Atlanta, Ga., base hospital, from Army Medical School, Lieuts. WILLIAM J. CARROLL, Brooklyn; JAMES J. FITZGERALD, New York. For duty, from Fort Oglethorpe, Lieut. HAROLD C. GOLLY, Brooklyn. For orthopedic instruction, and on completion *to Fort McPherson, Ga.*, for further instruction, from Fort Oglethorpe, Lieuts. FRANK N. POTTS, Buffalo; WILLIS E. CLARKE, KENNETH JOHNSON, New York.

*To Camp Hancock*, Augusta, Ga., for duty, from Fort Oglethorpe, Capt. JOSEPH C. DEVRIES, Brooklyn.

*To Camp Laurel*, Laurel, Md., for duty, from Fort Oglethorpe, Lieut. DWIGHT G. DUDLEY, Endicott.

*To Camp Lee*, Petersburg, Va., as orthopedic surgeon, from Boston, Lieut. HERBERT I. KALLET, Syracuse. Base hospital, from Camp Dodge, Major BERNARD S. OPPENHEIMER, New York.

*To Camp MacArthur*, Waco, Texas, for duty, from Fort Oglethorpe, Capt. CONRAD M. MEYER, New York.

*To Camp Meade*, Admiral, Md., for duty, from Army Medical School, Lieut. HORACE E. AURINGER, New York; from Camp Devens, Lieut. JOHN F. McNEIL, Central Islip; from Camp Wadsworth, Major ULYSSES S. KAHN, Binghamton.

*To Camp Sevier*, Greenville, S. C., base hospital, from Boston, Lieut. MORRIS T. KOVEN, Brooklyn.

*To Camp Shelby*, Hattiesburg, Miss., as orthopedic surgeon, from Boston, Lieut. ROWLAND P. STANLEY, New York.

*To Camp Sheridan*, Montgomery, Ala., base hospital, Capt. STEPHEN W. ROOF, New York.

*To Camp Sherman*, Chillicothe, Ohio, base hospital, from Camp Dodge, Lieut. ALOYSIUS M. MULHOLLAND, New York.

*To Camp Travis*, Fort Sam Houston, Texas, base hospital, from Camp Meade, Lieut. THOMAS F. MAHER, New York; from the Surgeon-General's Office, Major JOHN E. DAUGHERTY, Brooklyn.

*To Camp Upton, L. I., N. Y.*, base hospital, Lieut. MAXIMILIAN A. RAMIREZ, New York. For duty, from Army Medical School, Lieuts. WILLIAM J. CARROLL, Brooklyn; JAMES J. FITZGERALD, New York.

*To Camp Wadsworth*, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. LAWRENCE M. HACKETT, Bolivar.

*To Camp Wheeler*, Macon, Ga., base hospital, Capt. CHARLES L. VAUX, Central Islip, L. I.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. VINCENT G. SMITH, Staten Island; from Fort Sill, Capt. LOUIS H. NAHUM, New York.

*To Fort Logan, Colo.*, for duty, from Fort Riley, Lieut. WILLIAM E. CAMPBELL, New York.

*To Fort McPherson, Ga.*, for duty, from New York City, Lieut. NEIL C. STEVENS, New York.

*To Fort Moultrie, S. C.*, for duty, from Washington, D. C., Capt. STEWART S. PIPER, Elmira.

*To Fort Oglethorpe*, for instruction, Capts. JAMES B. THOMPSON, Amsterdam; ALBERT F. GRIFFITHS, Brooklyn; CHARLES P. HUTCHINS, Kingston; ALBERT DEF. YOUNG, Maysville; Lieuts. FRANCIS B. MAGUIRE, DANIEL F. O'KEEFE, Albany; PATRICK J. FITZGIBBONS, Amsterdam; EARL B. STEDMAN, Attica; WILLIAM B. AGAN, WILLIAM H. FIELD, CHARLES V. O'BRIEN, Brooklyn; ARTHUR F. GLAESER, Buffalo; THOS. L. McNAMARA, Corning; MORRIS H. NEWTON, Earlville; LESTER P. HOOLE, Eastport; FRANK H. CARBER, Forest Hills, L. I.; EARL L. EATON, Frankfort; WALTER J. FARRELL, Johnson City; LEONARD K. STELLE, Kingston; EDWIN A. CAMERON, STUART L. CRAIG, DAVID B. GILLIAM, FRANKLIN W. RICE, SIMON STEIN, New York; RAYMOND J. DEVINE, Syracuse; JOHN J. LEARY, Utica; MICHAEL J. J. COLUCCI, Yonkers; from duty as a private, Lieut. STEPHEN J. SPITZER, New York.

*To Fort Riley* with the board examining the command for nervous and mental diseases, from Camp Cody, Lieut. ABRAHAM M. RABINER, Albany; from Camp Greene, Capt. GEOFFREY C. H. BURNS, Central Islip, L. I.

*To Fort Sill*, Okla., base hospital, from Fort Oglethorpe, Lieut. THOMAS F. BERBEROVICH, New York.

*To Fort Wadsworth, N. Y.*, for temporary duty, and on completion *to his proper station*, from New Haven, Lieut. FRANK C. BALDERREY, Ithaca.

*To Hoboken, N. J.*, for duty, from Camp Custer, Capt. JAMES LER. HONDORF, Rochester; from Williamsbridge, Lieut. JACOB SACHS, Rochester. For sanitary inspection and on completion *to his proper station*, Major HARRY PLOTZ, Brooklyn.

*To Knoxville, Tenn.*, University of Tennessee, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. LEO JACOBS, Brooklyn.

*To Newark, Del.*, Delaware College, to make physical examinations and give medical attention to drafted men, and on compdetion *to his proper station*, from Fort Oglethorpe, Lieut. MILTON ARONOWITZ, Albany.

*To Newark, N. J.*, Newark Board of Education, Central High School, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. HAROLD GROSS, New York City.

*To New Haven, Conn.*, for duty, Capt. MONTGOMERY E. LEARY, Rochester.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Lee*, Petersburg, Va., base hospital, Lieut. ALEXANDER McG. FOSHEE, Brooklyn.

*To Plattsburg Barracks, N. Y.*, for duty, Lieut. MARTIN A. MURPHY, Hoosick Falls; from Camp Sherman, Lieut. ASA L. LINCOLN, New York.

*To Richmond, Ind.*, Richmond Commercial Club, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. GEORGE J. HOGBEN, Rye.

*To Rockefeller Institute* for instruction in laboratory work, and on completion *to Army Medical School* for duty, Capt. EUGENE F. CONNALLY, Troy. For instruction in the treatment of infected wounds, and on completion *to Camp Devens*, Ayer, Mass., base hospital, Lieut. WILLIAM H. HAWKINS, New York. On completion *to Camp Dix*, Wrightstown, N. J., base hospital, Lieut. ALFRED G. LANGMANN, New York. On completion *to Camp Sevier*, Greenville, S. C., base hospital, Major THEW WRIGHT, Eden Center. On completion *to Camp Upton, L. I., N. Y.*, base hospital, from New York, Capt. WILLIAM H. W. KNIPE, New York. On completion *to Camp Wheeler*, Macon, Ga., base hospital, Capt. HORACE B. PRITCHARD, Syracuse. On completion *to his proper station*, from Camp Dix, Capt. HARRY P. MENCKEN, Long Island City.

*To Savannah, Ga.*, State Industrial College, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. MILTON E. GREGG, Mottville.

*To Walter Reed General Hospital*, Takoma Park, D. C., for duty, from Camp Crane, Lieut. CHARLES T. OLCOTT, New York.

*To Yonkers, N. Y.*, Saunders Trade School, to make physical examinations, and to give medical atention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. MONROE B. KUNSTLER, New York.

*Honorably discharged* on account of physical disability existing prior to entrance into the service, Capt. CHARLES C. OSBORN, Albany; RAYMOND C. CONKLIN, Buffalo.

The following order has been revoked: *To Newport News, Va.*, for duty, Lieut. EDWARD R. WARE, New York.

### North Carolina

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. FLOYD C. SHUGART, Albemarle.

*To Fort Barrancas, Fla.*, for temporary duty, from Camp Shelby, Lieut. MICHAEL SALIBA, Wilson.

*To Fort Oglethorpe* for instruction, Capts. JAMES A. ANDERSON, Gastonia; JOSEPH J. SAUNDERS, Williamston; Lieuts. GARLAND V. GREEN, Advance; JESSE M. RUSSELL, Canton; PHILIP S. EASLEY, Statesville; FRANK L. THIGPEN, Tarboro.

*To Hoboken, N. J.*, base hospital, from Camp Greene, Capt. JAMES M. COVINGTON, Jr., Wadesboro.

### North Dakota

*To Camp Beauregard*, Alexandria, La., as orthopedic surgeon, from Boston, Lieut. JAMES F. HANNA, Fargo.

*To Camp Bowie*, Fort Worth, Texas, for duty, from Fort Riley, Lieut. JOHN W. NEWLOVE, Minot.

*To Camp Grant*, Rockford, Ill., base hospital, Capts. MARTIN P. RINDLAUB, Fargo; ROBERT D. CAMPBELL, Grand Forks.

*To Fort Oglethorpe* for instruction, Lieuts. LEROY SANTE, Ellendale; WILLIAM L. COWPER, Michigan.

*To Fort Riley*, base hospital, Capt. OTTO W. McCLUSKY, Carrington.

*Honorably discharged*, Lieut. EDMUND C. STUCKE, Garrison.

### Ohio

*To Camp Custer*, Battle Creek, Mich., for instruction, and on completion *to Camp Sherman*, Chillicothe, Ohio, with the board examining the command for nervous and mental diseases, Lieut. TEDREW S. KEYSER, Cleveland.

*To Camp Devens*, Ayer, Mass., for duty, from Fort Oglethorpe, Lieuts. FRED C. HUNT, Girard; JOHN D. SIDDALL, Kalida; WALTER J. WEISER, Marion; from Fort Wayne, Major EDWARD D. JINKS, Lima.

*To Camp Jackson*, Columbia, S. C., base hospital, Lieuts. MOSE S. GRIFFITH, Batavia; HARRY M. SAGE, Columbus.

*To Camp Lee*, Petersburg, Va., base hospital, Capt. GEORGE GILL, Elyria.

*To Camp MacArthur*, Waco, Texas, for duty, from Fort Oglethorpe, Capt. IRVING S. WORKMAN, Mount Vernon; Lieuts. EDGAR P. COOK, Granville; RAYMOND C. SCHUTTE, Kenton.

*To Camp Sherman*, Chillicothe, Ohio, with the board examining the command for nervous and mental diseases, from Fort Thomas, Lieut. AVONIA E. KISER, Cincinnati.

*To Camp Upton, L. I., N. Y.*, as orthopedic surgeon, from Boston. Lieut. MARTIN E. HARRELL, Woodstock.

*To Camp Wadsworth*, Spartanburg, S. C., with the board examining the command for nervous and mental diseases, from Camp Wheeler, Lieut. HARRY H. McCLELLAN, Dayton.

*To Camp Wheeler*, Macon, Ga., base hospital, Capt. WILLIAM E. SAVAGE, Cincinnati.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. CHARLES L. MAXWELL, Columbus; from Camp Sherman, Capt. JOHN W. SHEETZ, Columbus; from Williamsbridge, Lieut. JOHN H. NICHOLS, Columbus.

*To Fort Adams, R. I.*, for duty, from Fort Oglethorpe, Capt. JULIAN V. WINANS, Madison.

*To Fort H. C. Wright, L. I., N. Y.*, for duty, from Fort Oglethorpe, Capt. HIRAM P. H. ROBINSON, Medina.

*To Fort Oglethorpe* for instruction, Capts. JESSE T. McCARTNEY, Barnesvile; HOWARD F. SCHELL, Cincinnati; HARRY B. DORNBLASSER, Springfield; Lieuts. COURTLAND B. MEUSER, Ashland; HENRY R. BROWN, Chillicothe; EDW. C. MYLETT, FRANCIS J. OSBORNE, Cleveland; HUGH J. SAVAGE, Corning; DAN M. SKINNER, Hamilton; SAMUEL C. CALDWELL, Lancaster; CLARENCE M. VALENTINE, Linden Heights; LEW H. HAUMAN, West Cairo; ELMER H. NAGEL, Youngstown.

*To Mineola, L. I., N. Y.*, Signal Corps Aviation School, for duty, from Princeton, Lieut. MARTIN H. URNER, Cincinnati.

*To New York City*, Cornell Medical College, for duty, and on completion *to Hoboken, N. J.*, for duty, from Camp Dix, Major RALPH W. HOLMES, Chillicothe.

*To Plattsburg Barracks, N. Y.*, for duty, Lieut. HARRY R. BROWN, Chillicothe.

*To Rockefeller Institute* for instruction in bacteriology, and on completion *to Army Medical School*, for duty, Lieut. FOY C. PAYNE, Springfield. For instruction in laboratory work, and on completion *to Hoboken, N. J.*, base hospital, from Camp Gordon, Capt. ROY F. DRURY, Akron.

*To South Baltimore, Md.*, for duty, from Fort Oglethorpe, Lieut. CLIFFORD P. KROHN, Morrow.

### Oklahoma

*To Camp Custer*, Battle Creek, Mich., base hospital, from Camp Grant, Capt. ANTONIO DeB. YOUNG, Oklahoma City; from Camp Pike, Lieut. JAMES C. HAWKINS, Blackwell.

*To Camp Dodge*, Des Moines, Iowa, for duty, from Boulder, Colo., Lieut. DAVID C. WILLIAMS, Luther.

*To Camp MacArthur*, Waco, Texas, for duty, from Fort Oglethorpe, Lieut. ARCHIE BEE, Oklahoma City.

*To Camp Travis*, Fort Sam Houston, Texas, base hospital, Capts. ARTHUR W. WHITE, Oklahoma City; WILLIAM A. COOK, Tulsa; Lieut. WILLIAM R. LEVERTON, Hobart; from Camp MacArthur, Capt. GREGORY A. WALL, Tulsa.

*To Fort Oglethorpe* for instruction, Capts. LEANDER A. RICE, Oklahoma City; THOMAS C. McCURDY, Purcell; ALBERT M. CHAMBERS, Quinton; Lieuts. JOHN H. PAYNE, Durham; JOHN V. ANDERSON, Fairview; JAMES W. PROWELL, Ketchum; P. R. DAVIS, Noble; GAYFREE ELLISON, Norman; JOSEPH B. SHANNON, Pauls Valley; STANLEY B. JONES, Sallisaw; GEORGE A. WESTFALL, Supply.

*To Fort Riley*, as orthopedic surgeon, from Boston, Lieut. ALONZO P. GEARGART, Blackwell.

*To Pocatello, Idaho*, Technical Institute, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. GEORGE E. HARTSHORNE, Spire.

*To report by wire to the commanding general*, Southern Department, for assignment to duty, Lieut. THOMAS F. SHI, Blanchard.

### Oregon

*To Allesandro, Calif.*, Marsh Field, Signal Corps Aviation School, for duty, from Camp Kelly, Lieut. CARL W. ROBBINS, Gold Beach.

*To Camp Dodge*, Des Moines, Iowa, for duty, from Fort Riley, Capt. ROGER BISWELL, Haines.

*To Camp Lewis*, American Lake, Wash., base hospital, Capt. ERNEST A. SOMMER, Portland. For duty, Lieut. HAROLD T. ALLISON, Heppner.

### Pennsylvania

*To Camp Beauregard*, Alexandria, La., for duty, from Fort Oglethorpe, Lieut. PAUL C. BRUCE, Pittsburgh.

*To Camp Crane*, Allentown, Pa., for duty, from Camp Upton, Capt. WILLIAM L. ESTES, Jr., South Bethlehem; from Edgewood, Capt. ANDREW HUNTER, McKeesport.

*To Camp Custer*, Battle Creek, Mich., for duty, from Camp Dodge, Lieut. ROBERT E. STRASSER, Reading; from Camp Greene, Lieut. SCOTT A. NORRIS, Homestead.

*To Camp Devens*, Ayer, Mass., base hospital, Lieut. LOUIS W. KOHN, Plymouth.

*To Camp Dix*, Wrightstown, N. J., base hospital, from Camp Meade, Lieut. ISAAC H. SHELLY, Ambler. For duty, from Camp Wheeler, Capt. JACOB J. RUTBERG, Philadelphia.

*To Camp Forest*, Chickamauga Park, Ga., for duty, from Fort Oglethorpe, Lieut. VINCENT J. GRAUTEN, West Chester.

*To Camp Gordon*, Atlanta, Ga., base hospital, Lieut. DANIEL J. LANGTON, Philadelphia. For orthopedic instruction, and on completion *to Fort McPherson, Ga.*, for further instruction, from Fort Oglethorpe, Lieuts. RAYMOND A. WOLFF, New Kensington; MORRIS A. COHEN, Pittsburgh; ALEXANDER J. McRAE, Wilkes-Barre. With the board examining the command for nervous and mental diseases, Lieut. IRA A. DARLING, Warren.

*To Camp Grant*, Rockford, Ill., base hospital, from Boston, Lieut. GEORGE M. ASTLEY, Philadelphia.

*To Camp MacArthur*, Waco, Texas, for duty, from Fort Oglethorpe, Lieut. JOHN H. MOSS, Archibald.

*To Camp McClellan*, Anniston, Ala., base hospital, Lieut. MIECZYSLAW E. SMOCZYNSKI, Philadelphia.

*To Camp Meade*, Admiral, Md., for duty, from Fort Oglethorpe, Lieut. EDWIN E. BROPHY, Meadville; from New York City, Lieut. CHARLES S. FOX, Philadelphia.

*To Camp Pike*, Little Rock, Ark., as orthopedic surgeon, from Boston, Lieut. WILLIAM C. KELLER, New Bethlehem. For duty, from Army Medical School, Lieut. CLAYTON L. McCOY, Hastings.

*To Camp Sevier*, Greenville, S. C., base hospital, from New York, Lieut. ABRAHAM E. COLCHER, Philadelphia. For duty, from New York, Lieut. WILLIAM D. BAUN, Philadelphia.

*To Camp Shelby*, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieuts. LOUIS SELIGMAN, Philadelphia; WILLIAM E. RECTONWALD, Pittsburgh.

*To Camp Sherman*, Chillicothe, Ohio, base hospital, from Camp Shelby, Capt. THOMAS W. GRAYSON, Pittsburgh.

*To Camp Travis*, Fort Sam Houston, Texas, base hospital, from Camp Bowie, Lieut. FRED D. REYNOLDS, Pittsburgh.

*To Camp Wheeler*, Macon, Ga., base hospital, from Camp Gordon, Lieut. CHARLES C. GANS, Chambersburg.

*To Fort Moultrie, S. C.*, for duty, from Camp Laurel, Lieut. WILLIAM C. KESSLER, Philadelphia.

*To Fort Oglethorpe* as instructor, from Philadelphia, Major EDWARD MARTIN, Philadelphia; Capt. WILLIAM H. FURNESS, Wallingford. For instruction, Capt. JOHN R. OWENS, Pittsburgh; Lieuts. CHARLES E. SCHLAPPICH, Bernville; JOSEPH P. McCLAY, Chambersburg; GEORGE B. SICKEL, Chester; JOSEPH R. SWARTZLANDER, Doylestown; GEORGE A. TREIMAN, Harrisburg; ROSCOE Z. COPE, Hatfield; GEORGE F. CROTHERS, Linwood; JAMES R. DAVIS, McKees Rocks; JAMES L. SHOEMAKER, Norristown; FRANK B. BLOCK, DONALD B. COOVER, LEO. F. SCANLAN; RUDOLPH ALBERT WALTHER, Philadelphia; MARL A. BRAFORD, Pittsburgh; ROBERT L. ELLIS, York.

*To Fort Porter, N. Y.*, for duty, from Washington, Capt. WILLIAM S. RUCH, Carlisle.

*To Greensboro, S. C.*, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. SAMUEL W. REEVES, Fawn Grove.

*To Hoboken, N. J.*, for duty, from Camp Lee, Capt. STEPHEN W. TUNNELL, Philadelphia.

*To Jersey City, N. J.*, William L. Dickson High School, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. CLARENCE L. YOUNG, Peckville.

*To Mineola, L. I., N. Y.*, Signal Corps Aviation School, for duty, from Camp Jackson, Capt. HARRISON A. GREAVES, Philadelphia; from Fort Monroe, Capt. WILLIAM C. MEANOR, Beaver.

*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Gordon*, Atlanta, Ga., base hospital, from Fort Oglethorpe, Lieut. EARL P. WICKERHAM, Pittsburgh.

*To Plattsburg Barracks, N. Y.*, for duty, Lieut. WALTER J. LEAMAN, Leaman Place; from Fort McPherson, Capt. HARRY C. WESTERVELT, Pittsburgh.

*To report by wire to the commanding general*, Eastern Department, for assignment to duty, Capts. RICHARD G. BURNS, Pittsburgh; BENJAMIN R. KOHLER, Reedsville; Lieuts. JOHN L. HOFFMAN, Ashland; CHARLES E. LINDEMAN, Pittsburgh.

*To Rockefeller Institute* for instruction in the treatment of infected wounds, and on completion *to his proper station*, from Camp Hancock, Lieut. WAYNE L. SNYDER, Brookville.

*To Sunbury, Pa.*, for duty, and on completion *to his proper station*, from Philadelphia, Lieut. CHARLES S. MILLER, Philadelphia.

*To Washington, D. C.*, for duty in the Surgeon-General's Office, from Camp Sherman, Major STANLEY M. RINEHART, Pittsburgh. St. Elizabeth's Hospital, for intensive training, from Camp Dix, Lieut. JOSEPH P. BOYLE, Philadelphia.

### Porto Rico

*To Camp Dodge*, Des Moines, Ia., for duty, from Army Medical School, Lieut. AUGUSTINE R. LAUGIER, San Juan.

*To Camp Meade*, Admiral, Md., for duty, from Army Medical School, Lieuts. JUAN H. FONT, Barran Quitas.

### Rhode Island

*To Camp Custer*, Battle Creek, Mich., for duty, Lieut. JOHN E. RUISI, Westerly.

*To Camp Sherman*, Chillicothe, Ohio, base hospital, from Camp Shelby, Lieut. CHARLES L. LYNCH, Providence.

The following order has been revoked: *To Fort Oglethorpe* for instruction, Capt. ALLEN A. WEEDEN, Woonsocket.

### South Carolina

*To Camp A. A. Humphreys*, Accotink, Va., for duty, from Fort Oglethorpe, Capt. LOAMI J. SMITH, Ridge Springs.

*To Camp Meade*, Admiral, Md., from New York City, Lieut. LACY W. CORBETT, Bishopville.

*To Fort Oglethorpe* for instruction, Lieuts. DAVID A. BIGGER, Rockhill; CLAUDE C. LANGLEY, Travellers Rest; PAUL K. SWITZER, Union.

*To report by wire to the commanding general*, Southeastern Department, for assignment to duty, Capt. GASTON DE F. WILSON, Spartanburg.

*To West Orange, N. J.*, Essex Vocational School, to make physical examinations, and give medical attention to the drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. JOHN M. BARNWELL, Florence.

### South Dakota

*To Camp Dodge*, Des Moines, Ia., base hospital, Capt. GILBERT G. COTTAM, Sioux Falls.

*To Camp Travis*, Fort Sam Houston, Texas, as orthopedic surgeon, from Boston, Lieut. ALEXANDER O. FASSER, Belle Fourche.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Fort Riley, Lieut. JOHN C. ROGERS, White Lake.

*To Fort Oglethorpe* for instruction, Lieuts. ELROY L. PARKE, Canton; FRANK H. STEWART, Kimball; FLOYD D. GILLIS, Mitchell; OLAF HARALDSON, Watertown.

*To report by wire to the commanding general*, Central Department, for assignment to duty, Capt. ELI M. MOREHOUSE, Yankton.

### Tennessee

*To Camp Crane*, Allentown, N. J., base hospital, from New York, Lieut. LEONARD G. CROSBY, Memphis.

*To Camp Devens*, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. CHARLES Y. BAILEY, Baileyton.

*To Camp Jackson*, Columbia, S. C., for duty, and on completion *to Washington, D. C.*, for instructions, from Camp Hancock, Capt. LEE A. STONE, Memphis.

*To Camp Logan*, Houston, Texas, base hospital, Lieut. JESSE B. WHITE, Brownsville.

*To Camp Meade*, Admiral, Md., as orthopedic surgeon, from Boston, Lieut. CECIL E. WARDE, Memphis. For duty, from Army Medical School, Lieut. TATE B. COLLINS, Trezevant.

*To Camp Shelby*, Hattiesburg, Miss., for duty, from Fort Oglethorpe, Lieut. ALBERT V. KEEBLER, Harriman.

*To Camp Wadsworth*, Spartanburg, S. C., for duty, from Fort Oglethorpe, Lieut. WALTER W. WIDENER, Laurel Bloomery.

*To Camp Wheeler*, Macon, Ga., for duty, from Fort Oglethorpe, Lieut. HARRY M. WESTOVER, Pinson.

*To Fort Oglethorpe* base hospital, from Camp Cody, Lieut. GEORGE L. BROWN, Memphis. For instruction, Capts. JOHN B. SHOUN, Hampton; JOHN H. KING, Nashville; Lieuts. DANIEL B. ENSOR, Carter; GEORGE C. THOMAS, Greenfield; JOHN J. GREER, Knoxville; SUMNER C. ANDREWS, Memphis; LEONARD W. EDWARDS, Nashville; MILTON E. CANNON, Riceville.

*To Indianapolis, Ind.*, Arsenal Technical School, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Capt. MARVIN A. BLANTON, Union City.

*To New Haven, Conn.*, for duty, Lieut. BAYARD SULLIVAN, Chattanooga.

*To Washington, D. C.*, East Potomac Park, for duty, from Fort Oglethorpe, Lieut. HARRY M. WESTOVER, Pinson.

### Texas

*To Atlanta, Ga.*, University of Atlanta, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Capt. EDWARD C. FOSTER, Whitt.

*To Camp Alfred Vail*, Little Silver, N. J., for duty, from Army Medical School, Capt. W. AUDA VEE CASH, Abilene.

*To Camp Bowie*, Fort Worth, Texas, for duty, from Fort Riley, Lieuts. JOSEPH D. COLLINS, Arlington; REESE F. CURRIE, Manchaca.

*To Camp Crane*, Allentown, Pa., base hospital, from Hoboken, Lieut. CHARLES C. COOKE, Keene.

*To Camp Dodge*, Des Moines, Iowa, for duty, from Fort Riley, Capts. FOSTER R. WINN, Alvin; DAVID C. WYLIE, Aspermont.

*To Camp Grant*, Rockford, Ill., with the board examining the command for nervous and mental diseases, from Camp Custer, Capt. CLEVE C. ODOM, Childress.

*To Camp Logan*, Houston, Texas, base hospital, Lieuts. JOHN R. RANSON, Cleburne; FRANK H. NEWTON, Dallas. For duty, from Fort Riley, Lieut. KINCY J. SCOTT, Temple.

*To Camp Meade*, Admiral, Md., for duty, from Camp Wadsworth, Lieut. ERNEST H. HAMILTON, Kilgore.

*To Camp Newton D. Baker*, Fort Bliss, Texas, base hospital, from Fort Bliss, Capt. THAD SHAW, San Antonio.

*To Camp Travis*, Fort Sam Houston, Texas, with the board examining the command for nervous and mental diseases, from Camp Sheridan, Lieut. CHARLES W. STEVENSON, Loraine.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. JOSEPH KOPECKY, El Campo.

*To Chicago, Ill.*, Armour Institute of Technology, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. OZRO W. CUNNINGHAM, Valley View.

*To Fort Oglethorpe* for instruction, Lieuts. JAMES O. BUTLER, Banders; EARL H. NEWTON, Corsicana; HENRY CLAY, Dallas; JULES L. DELAMBRE, ARTHUR J. MYNATT, FRANK L. ROBBINS, Houston; MARVIN McT. LANDRUM, Lampasas; JOHN W. HARPER, Paducah; from Camp Travis, Lieut. EDGAR V. HENRY, Coleman.

*To Fort Sam Houston, Texas*, base hospital, Lieut. EDWIN M. SYKES, San Antonio.

*To Fort Sill, Okla.*, base hospital, Capt. LUKE P. ALLISON, Brownwood. For duty, from Fort Oglethorpe, Lieut. THOMAS R. BEECH, Slaton.

*To Jacksonville, Fla.*, for duty, from Everman, Texas, Capt. EUGENE W. R. WILLIAMS, Celeste.

*To Mineola, L. I., N. Y.*, Signal Corps Aviation School, for duty, from Fort Worth, Texas, Major ALBERT F. BEVERLY, Austin.

*To Princeton, N. J.*, Princeton University, for duty, from Camp Greene, Lieut. DANIEL H. BROOK, Travis.

*To report by wire to the commanding general*, Southern Department, for assignment to duty, Capts. WILLIAM S. LASATER, Aledo; PLEASE D. BARNHILL, Brenham; ISAAC P. SESSIONS, Rockdale; Lieuts. JOSEPH E. DILDY, Brownwood; SAMUEL S. McCRUM, Lone Oak.

*To San Antonio, Texas*, Aviation Section, Signal Corps, for duty, Lieut. SCOTT C. APPLEWHITE, San Antonio.

*To Tallahassee, Fla.*, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Oglethorpe, Lieut. GROVER C. FOX, Dallas.

### Utah

*To Camp Dodge*, Des Moines, Ia., for duty, from Fort Riley, Capt. JOHN O. EVANS, Salt Lake City.

### Vermont

*To Camp Dix*, Wrightstown, N. J., with the board examining the command for nervous and mental diseases, from Fort Porter, Capt. STEWART L. GOODRICH, Waterbury.

*To Camp Forrest*, Chickamauga Park, Ga., as orthopedic surgeon, from Boston, Lieut. ALBION A. CROSS, Williamstown.

*To Fort Oglethorpe* for instruction, Capt. WARREN J. HOWARD, Waitfield; Lieuts. CLARENCE L. GANNON, Burlington; MAURICE L. CHENEY, Lundonville.

*To Hoboken, N. J.*, for duty, from Fort Oglethorpe, Capt. WALTER J. WHITE, Middlebury.

*To report by wire to the commanding general*, Northeastern Department, for assignment to duty, Capt. JAMES M. HAMILTON, Rutland.

### Virginia

*To Camp A. A. Humphreys*, Accotink, Va., for duty, from Fort Oglethorpe, Lieut. JOHN M. RATLIFF, Marvin.

*To Camp Custer*, Battle Creek, Mich., base hospital, from Boston, Lieut. CHARLES W. MERCER, Richmond.

*To Camp Jackson*, Columbia, S. C., base hospital, Lieut. DOUGLAS S. DIVERS, Rocky Mount.

*To Camp Lee*, Petersburg, Va., base hospital, Lieut. RUSSELL L. HADEN, Crozet.

*To Fort Benjamin Harrison* for duty, from Camp Sheridan, Major WILSON E. DRIVER, Norfolk.

*To Fort Oglethorpe* for instruction, Capt. LURTY N. HARRIS, Harrisonburg; Lieuts. JAMES W. JORDAN, Ashland; EDWIN H. CORNS, Gate City; ROBERT L. RHODES, Roanoke.

*To Fort Wadsworth, N. Y.*, for temporary duty, and on completion *to his proper station*, from New Haven, Lieut. JAMES L. STRINGFELLOW, Norfolk.

*To Hoboken, N. J.*, base hospital, from New York City, Lieut. PATRICK M. CARROLL, Richmond.

*To New Haven, Conn.*, for duty, from duty as an enlisted man, Lieut. JAMES J. BARFIELD, Catawba Sanatorium.

*Honorably discharged* on account of physical disability existing prior to entrance into the service, Lieut. WILLIAM De H. FITZHUGH, Morrisville.

### Washington

*To Camp Custer*, Battle Creek, Mich., for duty, from Camp Pike, Lieut. EARLE V. SHEAFE, Winlock.

*To Camp Lee*, Petersburg, Va., as orthopedic surgeon, from Boston, Capt. HERBERT Y. BELL, Centralia.

*To Camp Lewis*, American Lake, Wash., for duty, Capt. JOHN R. STEAGALL, Tacoma.

*To Camp Zachary Taylor*, Louisville, Ky., for duty, from Army Medical School, Lieut. LUTHER R. MOORE, Seattle.

*To Chicago, Ill.*, Old South Division High School, to make physical examinations and give medical attention to drafted men, and on completion *to his proper station*, from Fort Riley, Lieut. HARRY MARTIN, Cashmere. Wendell Phillips High School, for the same duty, Lieut. WILLIAM A. MITCHELL, Colfax.

### West Virginia

*To Camp Bowie*, Fort Worth, Texas, as orthopedic surgeon, from Boston, Lieut. EARL B. HENSON, Charleston.

*To Camp Gordon*, Atlanta, Ga., base hospital, Lieut. CHARLES P. S. FORD, Hansford; from Camp Upton, Capt. CECIL DENHEM, Weston. For duty, from Fort Oglethorpe, Capt. HARRY G. STEELE, Bluefield. For orthopedic instruction, and on completion *to Fort McPherson, Ga.*, for further instruction, from Fort Oglethorpe, Lieut. CHARLES M. TRUSCHEL, Wheeling.

*To Camp Greene*, Charlotte, N. C., for duty, from Montgomery, Capt. EMMET R. BUCKLEW, Grafton.
*To Camp Jackson*, Columbia, S. C., base hospital, Lieut. EARL B. GERLACH, Huntington.
*To Camp Meade*, Admiral, Md., for duty, from Fort Oglethorpe, Lieut. VICTOR L. GLOVER, Inwood.
*To Fort Oglethorpe* for instruction, Capt. EDWARD F. SHAFER, Huntington; Lieut. CHARLES B. WILLIAMS, Philippi.
*To New York City*, Bellevue Hospital, for instruction, and on completion *to his proper station*, from Camp McClellan, Capt. HARRY M. LAVELLE, Littleton.

**Wisconsin**

*To Camp Custer*, Battle Creek, Mich., base hospital, Capt. HARLOW S. ROBY, Milwaukee.
*To Camp Devens*, Ayer, Mass., for duty, from Fort Oglethorpe, Lieut. CORNELIUS N. STUESSER, Oconomowoc.
*To Camp Dodge*, Des Moines, Ia., for duty, from Fort Riley, Lieut. HAROLD KALLING, Black River Falls.
*To Camp MacArthur*, Waco, Texas, base hospital, from Fort Riley, Lieut. FLOYD W. APLIN, Waukesha.
*To Camp Meade*, Admiral, Md., for duty, from Fort Riley, Lieut. PETER L. SCANLAN, Prairie du Chien.
*To Fort Oglethorpe* for instruction, Capt. ALLAN S. WHITE, Rice Lake; Lieuts. JENS ANDERSON, Racine; EDWARD L. GARNER, Rhinelander.
*To Fort Porter, N. Y.*, for duty, from Ann Arbor, Capt. JOHN M. CONLEY, Oshkosh.
*To Fort Thomas, Ky.*, with the board examining the troops for cardiovascular diseases, from Fort Riley, Lieut. CARLTON M. BEEBE, Sparta.
*To New Haven, Conn.*, for duty, Lieut. ARTHUR A. PLEYTE, Delafield.
*To New York City*, Bellevue Hospital, for instruction, and on completion *to Camp Upton, L. I., N. Y.*, base hospital, Lieut. ARTHUR T. JOHNSON, Sauk City.
*To report by wire to the commanding general*, Central Department, for assignment to duty, Capt. FRED D. JACKEY, Thorp.
*To Whipple Barracks, Ariz.*, for duty, from Fort Riley, Lieut. RAYMOND N. NELSON, Horicon.
The folowing orders have been revoked: *To Camp Devens*, Ayer, Mass., as assistant to camp surgeon, from Hoboken, Major EDWARD J. BARRETT, Sheboygan. *To Fort Oglethorpe* for instruction, Lieut. LEO A. HOFFMANN, Milwaukee.

# *Medical News*

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

## CALIFORNIA

**Free Aid for Service Families.**—The Talent Workers Hospital, San Diego, announces that any families of men in the United States service may obtain free treatment from 11 to 12 daily.——The dental department of the College of Physicians and Surgeons, San Francisco, offers free medical and dental attention to wives and families of fighting men and to soldiers and sailors not under the jurisdiction of government hospitals.

**Personal.**—Dr. George H. Locke, Lockford, has been appointed a state fire warden.——Dr. Arthur M. Smith, Oakland, has resigned as superintendent of the Alameda County Hospital.——Dr. C. W. Bryant, Lamoine, physician for the Lamoine Lumber Company, fractured both bones of the right leg near the ankle in a hand car accident.——Dr. Robert A. Peers, Colfax, head of the state board of health, has been made assistant chief of the tuberculosis bureau of the American Red Cross in France.——Dr. Peter Janss, Los Angeles, is under treatment in a hospital in Los Angeles.——Dr. George S. von Wedelstaedt, Los Angeles, was exonerated of the charge of violation of the espionage act, June 10.——Dr. Samuel C. Kohs of Stanford University has been elected assistant professor of psychiatry in Reed College, Portland, Ore.

## DISTRICT OF COLUMBIA

**Society Incorporated.**—The Senate, June 29, passed a bill incorporating the medical society of the District of Columbia. The incorporators named are: Drs. George Wythe Cook, Frank Leech, John W. Chappell, Edward G. Seibert, Philip S. Roy, Raymond T. Holden, Wilfred M. Barton, Edward Y. Davidson, John B. Nichols, Albert L. Stavely, Charles W. Frazoni, Henry C. Macatee, Daniel S. Lamb, Archie W. Boswell and J. Lawn Thompson.

**Personal.**—Dr. William Creighton Woodward, health officer of the District, has accepted the position of municipal health officer of Boston and will report for duty, August 1, succeeding Dr. Francis X. Mahoney, retired. Dr. Mahoney will resume private practice.——Dr. Isaac Stone, professor of gynecology in Georgetown University, has resigned after twenty-six years of service and has been succeeded by Dr. J. Thomas Kelly.——Drs. James M. Moser and John A. Foote have been appointed associate professors of pediatrics in Georgetown University.

**Supervisions of Serums and Vaccines.**—Ignorance or neglect, or both, on the part of a considerable number of druggists, with respect to the precautions needed for the preservation of the potency of serums, vaccines and other biologic medicinal reagents carried in stock, has led the health officer to issue a cautionary letter to all druggists in the district. Investigation showed prophylactic and curative agents of this group stored on the tops of counters and show cases, and in drawers and cupboards, mingled with chance assortments of other goods, without any effort whatsoever to keep them at any temperature other than the ordinary room or atmospheric temperature. Druggists have been urged to keep all such biologic agents in proper containers, in refrigerators, preferably in contact with the ice. Druggists unable to do this have been urged to discontinue the sale of such articles. Inspections will be made from time to time and unless the advice and caution given by the health officer prove effective an effort will be made to obtain legislation to meet the difficulty.

## ILLINOIS

**Illegal Practitioner Fined.**—The Illinois Department of Registration and Education reports that J. F. White, Paxton, was fined $25 and costs for violation of the act in regard to the treatment of human ailments.

**Chicago**

**Hospital Closed.**—Health Commissioner Robertson, July 5, is said to have ordered the Lincoln Hospital, 4147 Lake Park Avenue, which has been operating without a license, to be closed.

**Personal.**—Dr. Wilbur E. Post has left Chicago as a member of the mission to Persia, which is headed by President Harry Pratt Judson of the University of Chicago.——Dr. William M. Harsha has been appointed superintendent of the Municipal Tuberculosis Hospital.——Dr. Jesse D. Payne was injured internally, July 5, when a Wilson Avenue express train crashed into a bumper at the Wilson terminal.——Dr. Halford J. Morlan fractured his right arm while cranking his automobile, June 30.——Dr. B. Barker Beeson has been reelected Grand Northern Praetor of the Phi Beta Pi Medical Fraternity.

## INDIANA

**Examinations Must Be in English.**—The state board of medical registration and examination passed a resolution in January, discontinuing the translation of examination questions into foreign languages. The last questions to be printed in a foreign language were at the June examination of the board, for two graduates of the University of Athens, Greece, who had made application for the examination prior to the passing of this resolution.

**Personal.**—Dr. Orvall Smiley, Indianapolis, has been appointed a member of the Indianapolis City Board of Health and Charities.——Dr. Guthrie H. Wisener has been appointed by the city board of health, medical resident of the Indianapolis City Hospital and asistant to Dr. Herman C. Morgan, acting superintendent of the institution.——Dr. Marcus Ravdin has been elected president, Dr. Gardner C. Johnson, vice president, and Dr. Walter R. Cleveland, secretary, of the Evansville School Clinic for Indigent Children.

## MARYLAND

**New Buildings at the Marine Hospital.**—Provision for improvements at the Marine Hospital, Baltimore, was recently made by Congress and plans for the new structures have been completed. These will include additional ward buildings, laboratories and kitchens, and will necessitate a considerable increase in the hospital staff. All civil employees of the government, injured in any way in the performance of their duties, may receive treatment at the hospital, in addition to members of the merchant marine, the Navy and the coast guard. Army men are also numbered among the patients. The present capacity of the hospital is 150 patients. This will be increased to 250. Surg. Charles W. Vogel, U. S. P. H. S., is director of the hospital.

**For Blinded Soldiers.**—Plans of far-reaching scope which will make Baltimore the center for the reeducation of all war-blinded soldiers were outlined by Col. James Bordley at a recent meeting held at U. S. Army General Hospital No. 7 at Evergreen. Colonel Bordley addressed the members of

the Junior League and the alumnae of St. Timothy's and the Bryn Mawr schools, who have volunteered to serve as assistants to the professional teachers and directors of the work at Evergreen. In addition to the schoolrooms and workshops which are now going up at Evergreen, and which would embody all the latest and most practical ideas in the education of the blind, elaborate plans are being made for housing members of the families of the blind men who may come to Baltimore to visit them.

**Personal.**—Dr. George Walker, Baltimore, who went to France with the Johns Hopkins Hospital Unit, more than a year ago, has been detached from the unit and now has general supervision over social hygiene work in the three ports of entry of the American Expeditionary Forces.——Dr. Walter A. Baetjer, Baltimore, has been assigned to special service and is making a study of the prevention and treatment of "trench fever," which is one of the menaces to the health of the allied forces.——Capt. George L. Stickney, Baltimore, who has been ill in a hospital with trench fever, is rapidly recovering.——Dr. Mary R. Fleming, formerly of Baltimore, who was connected with a hospital at Tabriz, Persia, which was sacked recently by the Turks, is safe. It is understood that Dr. Fleming and her associates left Tabriz before the advent of the Turks.——Dr. Katherine T. Jones, Fullerton, has been appointed assistant superintendent of the Orthopedic Hospital, Philadelphia, from which she was graduated in 1914.——Dr. John R. Oliver, of the Henry Phipps Psychiatric Clinic, has been appointed special medical examiner for the supreme bench of Baltimore city, a new position created by the judges to assist in the administration of justice, especially in the criminal court.——Dr. Theodore A. Schaefer, a graduate of the University of Maryland, has been appointed a member of the staff of the Druid Sanatorium, Baltimore.

## MASSACHUSETTS

**Harvard Medical School Investigates Food Poisoning.**—In the interests of food conservation, the Department of Preventive Medicine and Hygiene of the Harvard Medical School has made a special research problem of the determination of safe and unsafe foods, and desires to get in immediate touch with outbreaks of food poisoning and infections in order to obtain definite knowledge as to the origin of these cases. Physicians and health workers within a reasonable distance of Boston are therefore requested to telephone this department, Brookline 2380, charges reversed, immediately on the discovery of any cases of disease attributable to food in any way. An investigator, who will endeavor to establish the cause of the trouble, will be sent without expense to the community.

## MISSOURI

**Personal.**—Dr. Theodore F. Frazer, Commerce, has been elected assistant physician of State Hospital No. 4, Farmington, to succeed Dr. Frank L. Long, who has resigned to enter the military service.

**Milk Commission Officers.**—At the meeting of the medical milk comissioners of Kansas City, June 3, Dr. George C. Mosher was elected chairman; Dr. Albert G. Hull, vice chairman, and Dr. Frank C. Neff, secretary.

**Health Offices Move.**—Under the reorganization of the Kansas City Health Department by Dr. Eugene H. Bullock, health commissioner and superintendent of the General Hospital, it is probable that every department of the board of health, excepting the Emergency Hospital, will be moved from the Water Works Building to the General Hospital building, and that the Emergency division will be moved to the city hall.

### St. Louis

**Clinics Opened.**—Under the joint auspices of the St. Louis Tuberculosis Society and the City Hospital Department free night clinics for diseases of the chest have been opened at 1411 South Broadway and 1243 South Vanderventer Avenue, under the supervision, respectively, of Drs. Paul F. Kistner and Andrew C. Henske.

## NEW JERSEY

**Personal.**—Dr. Elmer G. Wherry, Newark, who recently underwent a serious operation at Asbury Park, is recuperating.

**New State Officers.**—At the annual meeting of the Medical Society of New Jersey held in Spring Lake, June 25 and 26, the following officers were elected: president, Dr. Thomas W. Harvey, Orange; vice presidents, Drs. Gordon K. Dickinson, Jersey City; Philander A. Harris, Paterson, and Henry B. Costill, Trenton; recording secretary, Dr. Thomas N. Gray, East Orange (reelected); corresponding secretary, Dr. Harry A. Stout, Wenonah (reelected), and treasurer, Dr. Archibald Mercer, Newark (reelected). The president, Lieut.-Col. William G. Schauffer, M. C., N. A., Lakewood, was unable to be present, as he is on duty with troops.

## NEW YORK

**Three Counties Start Work on Tuberculosis Hospitals.**—Ground has been broken for new tuberculosis hospitals in Broome, Rockland and Nassau counties. The contracts for the Broome County institution total $117,233. The hospital is being constructed at Chenango Bridge, several miles from Binghamton, and is to have seventy-five beds. The Rockland County Hospital will be located near Summit Park and will cost approximately $90,000. The Nassau County Hospital will be located on a 97 acre site near Farmingdale, and the contracts total $108,259.

**Eight More Cities to Have Tuberculosis Clinics.**—The state Charities Aid Association, which is assisting local public and private tuberculosis organizations to establish dispensaries for the medical oversight, assistance and supervision of tuberculous soldiers rejected from military service, has made arrangements with local organizations which will assure the opening of dispensaries in Hudson, Newburgh, Kingston, Binghamton, Auburn and Mount Vernon within a month. Approximately $2,500 a year is needed to secure a medical and nursing staff and to equip and operate a dispensary in the smaller cities of the state. Arrangements have been completed for the reopening of clinics in Cohoes and Auburn. In a series of villages and towns in Westchester County, plans are under way for occasional clinic service to be given by tuberculosis specialists of New York.

### New York City

**Women Urged to Study Medicine.**—The Medical Women's Association of New York has initiated a campaign urging educated young women to study medicine.

**Personal.**—Governor Whitman has appointed Dr. Walter B. James head of the state commission for study of the feebleminded and their needs, which position was created through legislative enactment this year.

**Lutherans Offer Hospital for Soldiers.**—The board of directors of the Lutheran Hospital of Manhattan, July 2, passed resolutions offering their hospital building and equipment, without charge during the period of the war, to the government. The building has been open only a year and has accommodations for 100 patients. They have also offered a well-equipped nurses' home in the vicinity of the hospital.

**Dr. Brown Acquitted of Charges by Health Commissioner.**—After the hearing, July 5, at which Dr. Lucius P. Brown defended himself against the charges preferred against him by Mayor Hylan and Commissioner McBride, Health Commissioner Copeland expressed admiration for the official accomplishments of Dr. Brown. He admitted that the results of Dr. Brown's work were of value to the city and acquitted him of the charges alleging administrative mistakes.

**Women Sought to Treat Gas Cases.**—The Women's Overseas Hospital, which has now thirty women surgeons, nurses and aids in France, has been asked by the French government to send immediately fifty women to conduct a hospital of 300 beds to be established for the treatment of gas cases. Dr. Alice Gregory, who headed the civilian unit of the Women's Overseas Hospital, has resigned to go to the front to establish a dressing station. She will be succeeded by Dr. Marie K. Formad of Philadelphia.

**Mount Sinai Unit at the Front.**—The Mount Sinai Hospital Unit, designated as United States Base Hospital No. 3, has been established in a monastery near the front. Its staff consists of twenty-six officers, sixty-five nurses, 150 enlisted men, and several untrained women. Accommodations are provided for 1,500 patients. Mount Sinai Hospital and the American Red Cross provide the surgical supplies. The chief officers in the hospital are: Major Michael A. Dailey, commanding; Major George Baer, laboratory chief; Major Howard Lilienthal, chief surgeon; Major Herbert W. Celler, chief of the medical service, and Majors Edward Beer and Walter M. Brickner, surgeons.

## OHIO

**Personal.**—Dr. Frances M. Hollingshead, Columbus, director of child hygiene in the state health department, has left on indefinite leave of absence to conduct child welfare work

for the American Red Cross in France.——Dr. Howard A. Brown, Carroll, was operated on in the Protestant Hospital, Columbus, June 26, and is reported to be doing well.——Dr. Wade MacMillan, Cincinnati, has been appointed medical director of Miami University, Oxford.——Dr. John M. Withrow, Cincinnati, resigned, June 26, as chairman of the local district federal draft board on account of ill health.——Dr. A. Richard Kent, Springfield, sustained severe injuries of the leg in an automobile accident, June 20.——Commissioner Allen W. Freeman, Cincinnati, who has been head of the state department of health since last October has been called to military duty and Deputy Commissioner James E. Bauman will direct the work of the health department.

**Extend Tuberculosis Hospitals of State.**—Nearly one half of the counties and more than three fourths of the population of the state will be included in territory provided with tuberculosis hospitals, when temporary hospital district organizations effected within the past two weeks are carried to completion, the state department of health announces. Of the two newest tentative districts, one is composed of Wood, Hancock, Seneca, Crawford and probably Wyandot counties, and the other includes Jefferson and Belmont counties, with Tuscarawas, Harrison and Carroll counties as probable additional members. These districts were created under temporary organizations by the county commissioners involved, in meetings at Fostoria and Steubenville. Another district, comprising Ottawa, Sandusky, Erie and Lorain counties, with Huron County considering the question of joining, recently organized on a permanent basis, and decided to appropriate $125,000 for the construction of a hospital.

## PENNSYLVANIA

**New Dispensaries.**—The state health board has decided to establish, without delay, thirty new dispensaries with the object of diminution and possible elimination of the menace of the transmission of venereal diseases.

**Memorial Building Dedicated at Eaglesville.**—A building, dedicated to the memory of the late Stanley V. Mastbaum, long a director of the Eaglesville Sanatorium, and erected at a cost of $15,000, subscribed by his friends, was turned over to the board of directors of the sanatorium, June 22. The structure, one of the largest of the group of buildings comprising the sanatorium, has a capacity of thirty beds and will be occupied by the more serious cases of tuberculosis.

**Endow Beds in Military Hospital.**—An entire ward of ten beds has been endowed for one year in Military Hospital No. 1, located near Neuilly, on the outskirts of Paris, by the Baldwin School at Bryn Mawr, in memory of Elizabeth Nicholl Hill. Other recent endowments have been: a bed for six months from St. Clement's Episcopal Church, Philadelphia; a bed for one year from the New Century Club, Philadelphia; a bed for one year from Mrs. J. William White, in memory of her husband, Dr. J. William White.

### Philadelphia

**Personal.**—Dr. Jay F. Schamberg has been elected professor of dermatology of the Jefferson Medical College to succeed Dr. Henry W. Stelwagon, resigned.——Dr. Martin E. Rehfuss has been elected associate in medicine at the Jefferson Medical College.——Lieut. Walter J. Daly, member of the United States Medical Corps, has been reported by the British War Office as wounded while serving with a British force.——Dr. Joseph M. Asher has been appointed assistant surgeon to the Philadelphia General Hospital.

## WEST VIRGINIA

**Personal.**—Dr. Page D. Barlow, McMechen, is reported to be critically ill at his home.——Dr. Uriah H. Debendarfer, Mannington, is under treatment at the Ohio Valley General Hospital, Wheeling.

**Board Ruling Regarding Reciprocity.**—At the April meeting of the West Virginia Public Health Council it was voted to cancel reciprocal relations with such states as continue to recognize medical colleges rated in Class C by the Council on Medical Education.

**Entire Village Purchased for Sanatorium.**—The town of Denmar, Pocahontas County, has been purchased by the state board of control and the land and buildings will be used by the state for the establishment of the new State Colored Tuberculosis Sanatorium, for which appropriation was made by the last legislature.

## CANADA

**Compulsory Vaccination.**—The colonial secretary of the Dominion of Newfoundland has announced that residents of Nova Scotia or New Brunswick may not enter Newfoundland unless they have been successfully vaccinated within the last seven years.

**Faculty Changes.**—The University of Toronto announces that Dr. T. Brailsford Robertson, formerly professor of biochemistry and pharmacology in the University of California, San Francisco, has been appointed professor of biochemistry in the University of Toronto, and also, that Dr. John J. R. Macleod, formerly professor of biochemistry and physiology in the Western Reserve University, Cleveland, has been appointed professor of physiology in the University of Toronto.

**New Manitoba Society Officers.**—The annual meeting of the Manitoba Medical Association was held at Winnipeg, June 20 and 21, and the following officers were elected: president, Dr. George D. Shortreed, Grandview; vice presidents, Drs. G. Cansell and Daniel H. McCalman, Winnipeg; secretary, Dr. Hugh Mackay, Winnipeg, and treasurer, Dr. Sidney J. S. Pierce, Winnipeg. The association placed itself on record as being convinced of the benefit of the restrictions placed on the use and sale of alcohol in Manitoba.

**Personal.**—Because of the additional work caused by the call of the 19 year old class, two more medical boards have been formed in Manitoba, over which Lieut.-Col. H. Blanchard, and Dr. Charles A. Ritchie, Winnipeg, have been appointed to preside.——Col. Wilbert G. Fraser, Ottawa, has been appointed A. D. M. S., and placed in charge of the Petawawa Camp.——Dr. Henry F. MacKendrick, Galt, Ont., has returned home after more than a year's service with the Royal Army Medical Corps.——Captain Gunn of the Brant Military Hospital has been appointed medical superintendent of the Military Hospital of Newmarket under the invalided soldiers' commission.——Capt. Hibbert W. Hill, medical officer of health of London, Ont., has resigned to become director of the public health association of the state of Minnesota.——Dr. Robert Ferguson, London, has been elected president of the Ontario Medical Council.

## GENERAL

**Fund for Relief of Blind.**—It is announced that a fund of $100,000, to be known as the permanent Blind Relief War Fund Foundation, has been sent to Col. James Bordley, Baltimore, director of the Red Cross Institute for the Blind.

**A Warning.**—Some time ago THE JOURNAL published a warning relative to the activities of a person working under the name of L. C. Sykora, who called on physicians relative to the purchase or maintenance of roentgen ray apparatus. The Liebel-Flarsheim Company of Cincinnati writes: "A local physician informs us that he called on them claiming that he represented our company and agreed to repair their x-ray machine. When this doctor next wanted to use this machine he claims that about $60 worth of platinum interrupter points had been taken off by this party."

**New Officers.**—At the annual meeting of the American Laryngological, Rhinological and Otological Society, Inc., the following officers were elected: president, Col. H. S. Birkett, M.D., Montreal; chairman, eastern section, Dr. Robert Lewis, New York City; chairman, southern section, Dr. Clifton M. Miller, Richmond, Va.; chairman, middle section, Dr. Otto J. Stein, Chicago; chairman, midwestern section, Dr. Claude E. Cooper, Denver; chairman, western section, Dr. John J. Kyle, Los Angeles; secretary, Lieut.-Col. William H. Haskin, West Point, N. Y.; treasurer, Dr. Ewing W. Day, Pittsburgh, and chairman, publication committee, Dr. George L. Richards, Fall River, Mass.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Women's Hospital in the State of New York, New York City, and the New York Dispensary, each $10,000 by the will of Miss Cornelia Beekman.

Cornell University, to continue the John Metcalf Polk scholarship in the Medical School, $5,000 by the will of Dr. William Mecklenburg Polk.

Lankeneau and St. Agnes Hospitals, Philadelphia, each $500 by the will of J. A. Muller.

University Hospital, Philadelphia, $3,000 for the Children's Orthopedic Ward. Philadelphia, College of Physicians, $500, by the will of Dr. Gwilym G. Davis.

Episcopal Hospital, Philadelphia, one half of a fund of approximately $90,000, contingent on the death of his widow, by the will of John C. Brown.

## FOREIGN

**Epidemic of Influenza.**—The report came from London, July 2, that the influenza epidemic that has been so prevalent in Spain has entered England, is spreading rapidly, and has already reached the midland counties where schools have been closed and many mines are in danger of being shut down.

**Memorial to Massei.**—A portrait bust of the late F. Massei, professor of otorhinolaryngology at the University of Naples, was recently installed in the hospital where most of his work has been done. His "Manual on the Pathology and Treatment of the Larynx" has been translated into several other languages, and the list of his other works fills nearly a page in the Surgeon-General's Catalogue. He founded the *Archivi Italiani di Laringologia* in 1881.

**Typhus in Portugal.**—Late issues of *Medicina Contemporanea* of Lisbon state that the epidemic of typhus at Oporto is decreasing, only 288 cases having been reported during the latest week, which is forty-nine less than the preceding week. Dr. R. Frias, whose death we recently recorded, succumbed to this disease. Three cases were reported at Lisbon. At Oporto barracks are placed at the disposal of the persons compelled to leave the *ilhas* which are being burned down as fast as they are emptied. (These *ilhas* were described in Cortezo's report, summarized in The Journal June 29, 1918, p. 2059.)

**Weeding Out the Tuberculous from the Italian Army.**—Prof. E. Maragliano, member of the Italian upper house and of the council of the ministry of war, has been visiting five of the different centers for detailed examination of tuberculosis suspects. At each point he held conferences to which all the medical officers and other physicians in the vicinity were summoned. His purpose is to impress on all the absolute intention of the army and government to discharge from the army and to exclude from admittance to military service all who are suffering from tuberculosis, whatever its gravity or form. He will visit the four other centers of the kind in turn, thus completing the rounds of the *centri militari di accertamento per i tubercolotici.*

**Influenza in Spain.**—According to the *Medicina Ibera* of June 1, just received, the Spanish Public Health Service has announced that the epidemic prevailing at Madrid seems to be of grippal nature, and that no specific microbe has been isolated from the nasopharyngeal secretions. In the majority of cases the streptococcus and a gram-negative diplococcus of the catarrhalis type are all that is found. The disease is so mild that none are willing to have blood drawn for tests of specific agglutination. The governor of the Madrid province has established a scale of prices for a number of the commonly used drugs, after calling the druggists and wholesale dealers into consultation and taking an account of the stocks of the different drugs. The price list includes quinin, 1.5 pesetas per gram; sodium salicylate, 0.25 peseta; sodium benzoate, 0.5 peseta; aspirin (Bayer) 3 pesetas per tube, other makes 2.5 pesetas per tube; castor oil, 0.5 peseta per thirty grams. Penalties of from 500 to 5,000 pesetas can be imposed for infractions. These restrictions are said to have caused general indignation in the entire profession. In particular some deplore the distinction in price made between the imported and the home-made acetylsalicylic acid. The governor's decree seems to have been based on the assumption that the pharmacists would practice extortion on account of the prevailing epidemic, and this is regarded as an insult to the profession. (A peseta is about 20 cents.)

## SOUTH AND CENTRAL AMERICA, MEXICO AND WEST INDIES

**Uruguayan Hospital at Paris.**—The *Revista Medica del Uruguay* announces that the government has granted a monthly appropriation of 300 pesos to the Hospital Franco-Uruguayo recently organized at Paris by Uruguayan residents of France.

**Child Welfare Congress.**—The Second Pan-American Child Welfare Congress (*del Niño*) is to be held at Montevideo next December. Prof. L. Morquio is president of the committee of the organization, and reports that the arrangements for it are well under way.

**De Castro at Montevideo.**—The dean of the medical school of the University of Rio de Janeiro, Dr. A. de Castro, is also honorary professor of the University of Montevideo. He recently delivered two lectures there as the guest of the Uruguay Medical Association, and receptions and excursions in his honor were given by the local medical society and the Club Medico del Uruguay. The subjects of his addresses were "The System of Paraglandular Organs" and "Observations of a Neuropathologist."

## PARIS LETTER

Paris, June 14, 1918.

### Vocational Schools of the Union of Foreign Colonies in France

This organization, founded for the care of war victims, and whose membership comprises the best known members of the allied and neutral colonies, celebrated recently the second anniversary of the foundation of the oldest of its five establishments: l'Ecole de rééducation professionelle du Grand Palais. On this occasion a fête was held at the Grand Palais for the students of the school at which were present the professors, former students, the members of the Council of Administration of the union, delegates from other educational schools of the union, and the resident pupils of the other establishments, at the quai Debilly, Maison-Blanche, Invalides and the agricultural school at Juvisy. Important addresses were made, among them one by M. Ladislas Kone, one of the administrators of the Ecole du Grand Palais, and one by M. Walter V. R. Berry, president of the union, in which it was stated that having started with eight courses or ateliers of reeducation, the school now has twenty-five; the number of students has increased in two years from thirty-nine to 350, and since its foundation, 1,592 wounded and disabled soldiers have been given vocational training. But that is not all. By its influential connections in industrial and commercial circles, the union has also helped these people to secure advantageous employment or start in a modest business for themselves. One maimed soldier, for example, a former mechanician, is now assistant director of a cinema film factory at London, with a salary of 700 francs per month.

### Centers of Medical Instruction

Two centers of medical instruction have been created for the duration of the war, one in Paris, the other in Lyons, for medical students now in the army. Students who have been at the front since August, 1914, will be sent to these instruction centers, among them the students of the first year (who have taken the second inscription), and of the second and of the third year as far as the second examination of the "third doctorate" exclusively.

### Rank for Medical Students

The undersecretary of state of the Service de Santé militaire has ruled that medical students who have had eight inscriptions validated before Dec. 1, 1914, will be appointed *médecins aides majors* of the second class, provided they have served in the army for two years; one year as *médecin auxiliaire* at a medical post or in a sanitary formation of the *zone de l'avant*, and that they have successfully passed an examination testing their aptitude.

### Medical Care of War Invalids

Measures have been taken by the authorities to permit war invalids, disabled soldiers and pensioners to receive at any military hospital the treatment necessary for their recovery.

### Medicinal Plants

France imports thousands of tons of medicinal plants, representing a value of several tens of millions of francs. The Comité des plantes médicinales, recently appointed by the minister of commerce, is of the opinion that France should produce as far as possible all of the necessary medicinal plants, and therefore it is instructing the public at large concerning the harvesting and drying of the medicinal plants most commonly used, such as poppy petals, cherry peduncles, and linden flowers.

### American Red Cross Child Welfare Work at Marseilles

The American Red Cross, in order to direct the attention of the people of Marseilles to the well-being, health and development of the children, has organized conferences, at which moving pictures are shown, thus instructing parents and children in principles of hygiene that will safeguard the health of the little ones. The mothers are urged to bring their babies to daily consultations where the children are examined by specialists. The result of the examination is recorded in a health bulletin which is given to the mother free. A hygienic exhibit has also been organized; nor has the physical education of the children been neglected. A playground has been built, occupying a considerable area, in which all necessary apparatus for play and physical training has been installed.

### Bombardment of Hospitals

May 28, the German aviators deliberately bombed hospitals located several kilometers behind the front, in which were half a score of sick and wounded Americans, as well as several hundred wounded and sick French soldiers. A number of the patients were wounded by glass fragments. One French nurse was killed, another was mortally wounded, and several civilians were killed. Three Canadian hospitals also have been partly destroyed by German aviators since May 19. A large number of the wounded were killed or wounded again. Many bomb fragments fell into the wards. Barracks and cantonments have been either destroyed or damaged during these aerial raids by the Germans; neither the presence of women nor of the sick and wounded has deterred them from carrying out their work of tragic destruction.

### Assassination of Professor Pozzi

Dr. Jean Samuel Pozzi, professor of clinical gynecology in the Paris Faculté de médecine, was assassinated in his consulting room on the evening of June 13 by a man on whom he had operated about two years ago. The man was a petty official who had been cured, or, at least, saved from a grave complication, but he feared a relapse and believed that another operation should be performed. He wrote several letters to Dr. Pozzi, and as he became more and more insistent on having an interview with Pozzi, the latter wrote that he would see him on the evening of the 13th. It was during this interview that the assassin fired four shots at Pozzi and then turned the weapon on himself, shattering his left temple. One of the bullets entered Pozzi's abdomen, producing multiple penetrating wounds of the intestine. The patient was at once conveyed to a hospital installed in the Hotel Astoria and was operated on by Dr. de Martel in the presence of M. Clemenceau, the premier, a close friend of Pozzi. Unfortunately, the nature of the wounds was such that Pozzi died during the operation.

Pozzi was born, Oct. 3, 1846, in Bergerac, in southwestern France. He was the son of a clergyman of the Reformed church. He received his doctorate degree in medicine in 1873. Two years later he was appointed associate on the Paris Faculté de médecine, and in 1877 surgeon to the hospitals. In 1901 he was made professor of clinical gynecology, a chair created especially for him. He wrote a number of works, touching not only on gynecology but also on general surgery. His book, "Traité de gynécologie clinique et opératoire," has been a great success since its first edition, which was published in August, 1890, and was sold out in February, 1891. This book was awarded the Godard prize of the Académie des sciences in 1890, and the Huguier prize of the Académie de médecine in 1892. It was translated into several foreign languages, among them English. Pozzi was elected a member of the Académie de médecine in 1896, serving as vice president in 1918. Pozzi always took an interest in politics, and for nine years he was the representative in the senate of his native province, the Dordogne.

## LONDON LETTER

LONDON, June 11, 1918.

### Interallied Food Supplies

Last November, the interallied congress at Versailles appointed an interallied scientific food commission, consisting of two delegates from each of the four countries, America, England, France and Italy. A delegate representing Belgium has since been added. The object of the commission is to consider all questions affecting the supply of food to the various allied countries, in agreement with the allied food executives (which determine the division of food among the Allies), and to make recommendations to their respective governments. The delegates have held two meetings, the first in Paris and the second in Rome, and they are now holding one in London. During their first two meetings they had to establish certain physiologic principles, such as the amount of food necessary for each man, and as a result, the amount of food necessary for each country. That involved the consideration of the population, in age and sex, in a way that would establish the food needs of each country. The next problem is the making of a census of the production of foodstuffs in each country. When the delegates have assured themselves of the correctness of these figures, they will then know what is the deficit that will have to be met by importation. In this way the commission will be able to advise the allied executives as to the amount actually necessary to be imported into each country. The meeting of the commission in London was opened by J. J. Thomson, O.M., president of the Royal Society, and the delegates present were: America—Russell H. Chittenden, professor of physiologic chemistry, Yale University, and Graham Lusk, professor of physiology, Cornell Medical School, director of Russell Sage Institute of Pathology, New York; France—Dr. E. Gley, professor at the Collège de France, member of the Academy of Medicine, and Dr. J. P. Langlois, professor of medicine, Paris, member of the Academy of Medicine; Italy—professor Bottazzi, director of the Institute of Physiology, University of Naples, and Professor Menozzi, director of the School of Medicine, Milan; Great Britain—Dr. Ernest H. Starling, F.R.S., professor of physiology, University College, London, and Mr. T. B. Wood, Fellow of Conville and Caius College, Drapers Professor of Agriculture in the University of Cambridge; Belgium—Dr. H. Rulot, inspector of health and hygiene in the Belgian Ministry of the Interior.

### American Wounded at Windsor

The king has given permission for a hut hospital to be built, according to the latest design, in Windsor Great Park, near his castle, for the benefit of American wounded, who are to be brought to England for treatment. A fully equipped hospital of 500 beds is the splendid gift which the Joint War Committee of the British Red Cross Society and the Order of St. John has decided to present to the American Red Cross. The site of the new hospital has a fine view of Windsor Castle, and it is hoped that the institution will be ready early in the autumn. The gift has been accepted by Major Endicott on behalf of the American Red Cross.

### The Future of the Medical Profession Under a Ministry of National Health

It is remarkable that while this country is engaged in the greatest of all wars, in its struggle on which depends not only its future but also the future of civilization, such questions as the future relation of the medical profession to the state should be calmly discussed. It shows a spirit of confidence very different from the vaingloriousness of the Germans, one which resembles that of the other great world empire of the past comparable to it in many ways. It may be remembered that when Rome was engaged in its life and death struggle with Carthage, and Hannibal was defeating her armies and overrunning her territory, the very ground under his feet was sold in Rome. At the Royal Society of Medicine the future of the medical profession under the ministry of health has been under discussion at several meetings. Sir William Osler has made a characteristic contribution to the subject and criticized the present condition of things severely. He said that the insurance, the tuberculosis, the syphilis, the maternity and the child welfare legislations have brought the state to the door of the physician; and willy-nilly, he has become in some measure a civil servant. Much of this legislation has lacked effectiveness owing to the timorous regard for the fetish of local authority. He hoped that a strong ministry of health would not be content with a guerilla warfare against such preventable diseases as tuberculosis and syphilis. With intellectual weakness in high places the profession has too often suffered the pace to be set by organized ignorance. For example, how many thousands a year does the King Edward Hospital Fund contribute to the pathologic and clinical laboratories of the London hospitals? What is the annual budget for pathologic work in each of the hospitals controlled by the Metropolitan Asylums Board? But the war has furnished the profession with a great lever in public health matters. He discussed three points. The first was the independence of the physician. A scheme with a formidable roll of inspectors, directors, administrators, secretaries and ministers had been suggested. But could a free-souled, self-reliant man exist as their executive officer? He did not see how that competition which has played such an important rôle in the life of the profession for 2,500 years was to continue with the whole population in a state service. His point was the relation of the state to research. There was an invincible prejudice against state aid which was peculiarly insular and Anglican. There were no grounds for this. Excepting Lister's work, practically all the first hand discoveries had been made by men in official harness, such as Griffith, Evans, Manson, Ross, Bruce and Leishman. The debt to the Local Government Board for its researches and preventive medicine was a hundredfold greater than to all the universities combined. His third point was the position of hospitals in the scheme. They were preparing for the change, and within a few years there should be a thoroughly working combination of the

voluntary agencies with the state. The country hospitals had already placed their services most generously for the work in tuberculosis, in syphilis, and in child welfare. But to come into a national scheme there would have to be certain radical alterations in the arrangement of the staff. In many the tuberculosis officer, the syphilis expert, the neurologists under the pension boards, the maternity physician and the infant-welfare physician had been recognized, and special departments opened. The difficulty would be with the medicine and surgery, if there were to be paid consultants attached to the hospitals. He would speak of medicine only, as nowadays we could grow surgeons anywhere. Not so the modern physician, who had to be a man of much broader gage, and was harder to cultivate. To grow a good consultant, take a physician of 30 or thereabouts, make him a half-time man with a good salary, give him from eighty to 100 beds, with control of the outpatients and a staff of paid assistants. His hours in the hospital would be from 9 to 1, and his work would consist in seeing the special patients sent from the neighboring physicians, making the ward visit, and directing the work in the clinical laboratories. The afternoon would be occupied in private consultations and in country visits at fixed rates. What a godsend such a man would be in every county.

## Marriages

ASST. SURG. HORACE EVANS SPRUANCE, U. S. Navy, San Diego, Calif., stationed at North Island, to Miss Elise Johnson Whipple of Santa Ana, Calif., June 12.

CAPT. JEROME FRANK STRAUSS, M. R. C., U. S. Army, Chicago, on duty at Camp Logan, Texas, to Miss Lois Mary David of Chicago, June 7.

CAPT. WALTER SCOTT WALLACE, R. A. M. C., Newport, Wash., to Miss Louise Estelle Boggs of Lewiston, Idaho, June 22.

WILLIAM GORDON LYLE, New York City, to Miss Leontine de Sabla of San Mateo, Calif., and New York City, June 28.

LIEUT. ELMER WALFRED SEABURG, M. R. C., U. S. Army, to Miss Mabel Barbara Belsley, both of Peoria, Ill., June 5.

LIEUT. EDWARD CHASE DURGIN, M. R. C., U. S. Army, to Miss M. Violet White of Newtonville, Mass., June 10.

CAPT. WILLIAM H. SMITH, M. R. C., U. S. Army, to Miss Elsie Steer, both of Baltimore, at Philadelphia, May 14.

LOREN KENNETH MEREDITH, Des Moines, Iowa, to Miss Irene Shadbolt Hix of Ludington, Mich., June 22.

JESSE T. RAINES, Malesus, Tenn., to Miss Ruby H. Dillingham of Colorado Springs, Colo., June 19.

FREDERICK BRYTON LITTLE, Manayunk, Pa., to Miss Eleanor Derr Slingluff of Norristown, Pa., June 19.

WILLIAM FRANCIS HESLIN, JR., to Miss Marguerite Ursula Madden, both of New York City, June 29.

JOHN ROLAND BLACK, to Miss Mary D. Bussey, both of Jefferson, Iowa, at Madrid, Iowa, June 16.

WILLIAM MOORE, New York City, to Mrs. Henrietta W. Boughton, at Norwalk, Conn., June 23.

WILLIAM STUART WATSON, Ivy Rock, Pa., to Miss Lillian B. Reiff of Royersford, Pa., recently.

GEORGE KARL FENN, Chicago, to Miss Vera Eleanor Wallace of Chicago Heights, Ill., recently.

ROBERT GORDON KOGER, Norwich, Kan., to Miss Ermon Sloan of Albany, Ky., June 26.

GILBERT EMANUEL ANDERSON to Miss Margaret Gill, both of North Bend, Ore., May 31.

HENRY WILLIAM STUVER to Miss Addie Josephine Aicher, both of Denver, June 15.

WILLIAM JOHN ZOPFI to Mrs. Sarah M. Hoover, both of Findlay, Ohio, recently.

ISRAEL SHERRY to Miss Dora Josephine Lichtenstadt, both of Chicago, June 26.

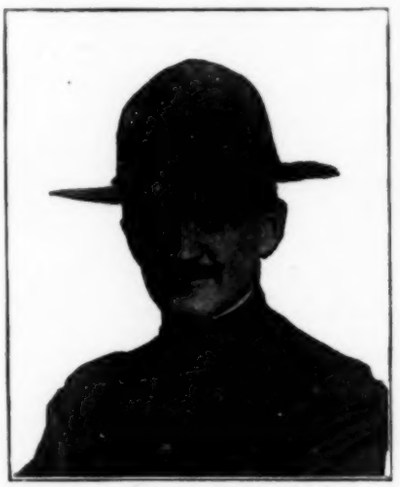
GORHAM BACON to Miss Margaret Butterfield, both of New York City, June 29.

JACOB GEIGER to Miss Virginia Lowenstein, both of New York City, June 16.

WALTER O. GREEN to Winifred Green, both of Louisville, Ky., June 10.

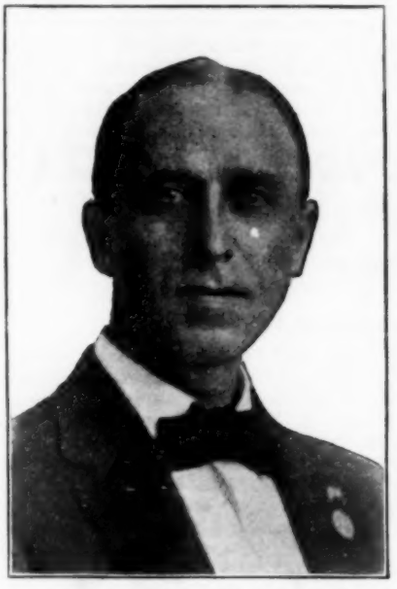
## Deaths

**Lieut.-Col. Frank C. Todd, M. C., N. A.,** Minneapolis, Minn.; on duty at Camp Dodge, Iowa; University of Minnesota, Minneapolis, 1892; aged 48; a Fellow of the American Medical Association; elected second vice president of the Association and chairman of the section on ophthalmology in 1913-1914; died in the Presbyterian Hospital, Chicago, July 4, from lobar pneumonia. Dr. Todd had been professor and chief of the department of diseases of the eye, ear, nose and throat in his alma mater since 1869; surgeon to the University of Minnesota, the Hill Crest Surgical, St. Barnabas, City, Northwestern, and Asbury hospitals; and Chicago, Milwaukee and St. Paul Railway Company. He was a member of the American Academy of Ophthalmology and Oto-Laryngology; president of the Minnesota Academy of Medicine in 1914, and the Hennepin County Medical Society in 1902. He was also the author of several monographs on subjects connected with his specialties and one of the collaborators of the American Encyclopedia of Ophthalmology.



Died in the Service
LIEUT.-COL. FRANK C. TODD, M. C., N. A., 1870-1918

**William Mecklenburg Polk,** New York City; College of Physicians and Surgeons in the City of New York, 1869; aged 73; a gynecologist of international repute; died in a sanatorium in Atlantic City, June 23. Dr. Polk entered the Confederate Army in 1861, and served throughout the Civil War. He began practice in New York City in 1869; was professor of therapeutics in Bellevue Hospital Medical College, from 1876 to 1879, professor of obstetrics and gynecology in the New York University from 1879 to 1898, and dean and professor of gynecology in Cornell University Medical College since 1898. He was a Fellow of the American Medical Association; president of the American Gynecological Society in 1896; president of the New York Obstetrical Society in 1884; president of the New York Academy of Medicine from 1910 to 1914; a member of the Continental Anglo-American Medical Society of Paris, and once its vice president, and one of the founders of the International Congress of Gynecology and Obstetrics. Since 1890, Dr. Polk had devoted himself entirely to gynecologic surgery.



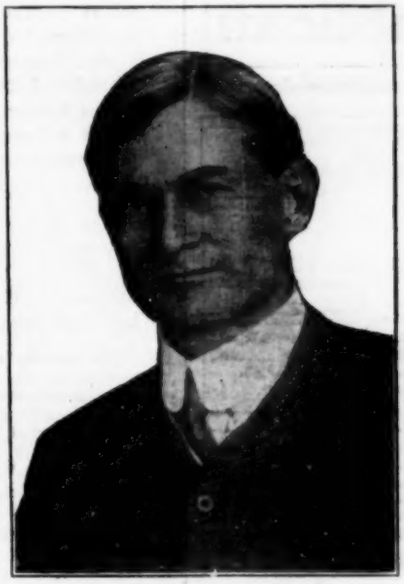
Died in the Service
IN FRANCE
MAJOR GEORGE E. HILGARD, M. R. C. U. S. ARMY, 1877-1918

**Lieut. Harold Sidney Morgan, M. R. C., U. S. Army,** San Diego, Calif.; Johns Hopkins University, Baltimore, 1915;

aged 28; was killed in action in France, April 12. Before graduation he was assistant to Dr. Wilfred Grenfell on the hospital ship *Strathcona*, on the Labrador coast. He volunteered for war service in the autumn of 1917, and was sent to France with a reenforcement of the Presbyterian Base Hospital Unit No. 1. After a month at the base he was made medical officer of the Ninth Battalion Royal Irish Fusiliers, British Expeditionary Forces, and was on duty with this command until his death. On April 12, he was in one of the regimental aid posts at the front near Kemmel when a shell burst near, wounding him severely. While he was being carried into a dugout to receive first aid, a shell explosion buried him and the bearers.

**P. A. Surg. Paul Tonnel Dessez,** U. S. Navy, Washington, D. C.; University of Georgetown, Washington, D. C., 1897; aged 42; a Fellow of the American Medical Association; on duty with the United States Marine Corps in France; was killed at Chateau Thierry, about June 6. The Distinguished Service Cross was awarded posthumously to Surgeon Dessez for "organizing the service of caring for and evacuating the wounded in a most systematic and admirable manner, constantly exposing himself to the enemy, displaying extraordinary heroism, coolness and energy."

**Major George Engleman Hilgard, M. R. C., U. S. Army,** Belleville, Ill.; Washington University, St. Louis, 1897; aged 41; a Fellow of the American Medical Association; formerly captain and assistant surgeon, Illinois National Guard, assigned Fourth Infantry; a veteran of the Spanish-American War; who was sent to France, in the latter part of last year, and was on duty in the front lines, and as the result of a breakdown from overwork, was sent to a hospital in Paris; died there, June 25.



Died in the Service
AT CAMP SHERIDAN
MAJOR WOODS WALKER LYNCH,
M. R. C., U. S. ARMY,
1873-1918
*(See The Journal, June 29, p. 2046)*

**Charles B. Leonard,** Detroit; Detroit College of Medicine and Surgery, 1904; aged 37; a member of the Michigan State Medical Society; instructor in chemistry in Detroit Medical College, and assistant to the chemist of Wayne County; who had been ill with pneumonia followed by empyema and diphtheria; died at his home, June 28, from embolism of the brain.

**Marie Louise White,** Chicago; Northwestern University Woman's Medical School, Chicago, 1892; aged 48; a Fellow of the American Medical Association; an instructor in the Post-Graduate Medical School of Chicago, and one of the most prominent women physicians of the city; died at her home, July 6, from heart disease.

**Floyd Russell Greene,** Eureka Springs, Ark.; Washington University, St. Louis, 1876; aged 66; a Fellow of the American Medical Association; for many years an officer of the Carroll County Medical Society; president of the board of health of Eureka Springs; died at his home, June 17, from chronic nephritis.

**Fred Conley Rice,** Ripley, N. Y.; University of Buffalo, N. Y., 1902; aged 40; a Fellow of the American Medical Association; formerly health officer of Chautauqua County; while driving in his automobile over a grade crossing at West Cortland, June 21, was struck by a trolley car and instantly killed.

**Washington G. Kishler,** St. Marys, Ohio; Medical College of Ohio, Cincinnati, 1846; aged 94; a member of the Mississippi Valley Medical Association; a veteran of the Mexican War; died at his home, June 11, from lobar pneumonia.

**William John Moore,** Syracuse, N. Y.; New York University, New York City, 1880; aged 59; health officer of Cortland, N. Y., for twenty-one years; formerly coroner of Cortland County; died in the Syracuse Memorial Hospital, June 19, from septic pneumonia.

**Claude Conwell Sackett,** Laurel, Neb.; State University of Iowa, Iowa City, 1898; aged 43; a Fellow of the American Medical Association; for several years a member of the school board; while fighting robbers, June 18, was shot and died from his wounds, June 19, in a hospital in Sioux City.

Died in the Service
IN FRANCE
LIEUT. HAROLD S. MORGAN, M. R. C.,
U. S. ARMY, 1890-1918

**William H. White,** Otisville, N. Y.; Johns Hopkins University, Baltimore, 1907; aged 38; physician in charge of the Women's Unit of the New York City Tuberculosis Sanatorium, Otisville; died in that institution, May 9, from pulmonary tuberculosis.

**James J. Smith,** New Britain, Conn.; College of Physicians and Surgeons, Baltimore, 1888; aged 55; a specialist on diseases of the eye, ear, nose and throat; died in the Hartford Hospital, May 23, from cerebral hemorrhage.

**Robert McDonald Shannon,** Piqua, Ohio; Starling Medical College, Columbus, Ohio, 1896; aged 49; a Fellow of the American Medical Association; surgeon to the United States Steel Corporation, Piqua; died at his home, June 23, from cerebral hemorrhage.

Died in the Service
AT FORT OGLETHORPE, GA.
LIEUT. WILLIAM E. EMERY, M. R. C.,
U. S. ARMY, 1890-1918
*(See The Journal, last week, p. 57)*

**E. Lee Branscome,** Galax, Va.; University College of Medicine, Richmond, Va., 1901; aged 53; was found dead in his office, June 22, from the effects of morphin, believed to have been self-administered, with suicidal intent.

**Wiliam Seymour Petrie,** Fairview, Ky.; New York University, New York City, 1879; aged 61; who recently underwent operation for disease of the stomach; died at the home of his sister in Hopkinsville, Ky., June 20.

**Brady O'Neill Williams,** Martins Ferry, Ohio; University of Pennsylvania, Philadelphia, 1873; aged 71; a Fellow of the American Medical Association; died at his home, June 28, from cerebral hemorrhage.

**Louis S. Tucholka,** Chicago; Hering Medical College, Chicago, 1901; aged 43; who was awaiting trial for manslaughter on account of an alleged illegal operation; died in the hospital of Cook County Jail, June 28.

# The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

## SILVOL INELIGIBLE FOR N. N. R.

### Report of the Council on Pharmacy and Chemistry

The following report on Silvol (Parke, Davis & Company) was adopted by the Council and its publication authorized.

W. A. PUCKNER, Secretary.

The Council took up the consideration of Silvol (Parke, Davis & Company) because of inquiries received. The following report was submitted by the referee in charge of silver preparations:

Silvol (Parke, Davis & Company) is a silver-protein preparation of the Argyrol type. Like Argyrol, it is said to contain about 20 per cent. of silver. The referee finds that, like Argyrol, it is nonirritant to the nasal mucosa in a 10 per cent. solution; does not precipitate with chlorid; dissolves in water readily; a 25 per cent. solution has a high specific gravity (Silvol, 1.137 at 20 C.; Argyrol, 1.147 at 20 C.), and is not very viscid (viscosity, 1.25). A 1:1,000 solution of Silvol is clear and about 50 per cent. deeper in color than a solution of Argyrol of the same strength.

Silvol differs from Argyrol mainly in that its solutions yield a fine precipitate with egg albumin (under suitable conditions), while Argyrol is nonprecipitant; and in that Silvol solutions are not so effectively decolorized by Lloyd's reagent.

The manufacturers did not reply to an inquiry with regard to the basis for the claims made for Silvol (see Appendix). The referee was therefore obliged to deduce these claims from the firm's advertising matter. About the same claims are made for the local use of Silvol as are generally made for Argyrol. These may be accepted without detailed evidence in view of the similarity of the two preparations.

Its usefulness, as suggested in the advertising, when given by mouth "in the treatment of acute or chronic gastritis, gastric ulcer, or gastro-enteritis," or the efficacy of very dilute solutions (0.2 per cent.) against dysentery, etc., is doubtful and requires substantiation by evidence. The claims that Silvol is astringent, though nonirritant and noncoagulant, that it is a "powerful germicide" or even that it is a "powerful antiseptic," and that it may be used with advantage wherever "a silver salt is indicated," need substantiation. There is no proof of the assertions that Silvol is "the most efficacious of silver salts"; "the most efficient silver antiseptic," and "the most remarkable organic silver compound. . . ."

As the manufacturers have not presented any evidence for their highly improbable claims, and as they have not signified any intention of making their claims agree with substantiated facts, it is recommended that Silvol be declared inadmissible to New and Nonofficial Remedies.

The Council adopted the report of its referee and authorized its publication.

#### APPENDIX

The following letter from the Secretary of the Council was sent to Parke, Davis & Company, March 20, 1917. No reply to it has been received:

The referee of the Council who is conducting an investigation of silver preparations asked me to inquire if you are willing to submit your evidence for the following claims which are made in your circulars for Silvol:

1. How it is possible for the solution to be astringent, and at the same time nonirritant and noncoagulant?

2. That intestinal irrigation with a Silvol solution containing 10 to 15 grains to the pint is sufficiently bactericidal to "be used in the abortive treatment of such infectious processes as dysentery, cholera infantum, and colitis."

3. What evidence have you as to the degree of antiseptic and germicidal power of Silvol solutions?

4. What evidence have you as to the degree of antiseptic and germicidal power of 5 per cent. Silvol Ointment?

A reply to the above questions and any other information in regard to Silvol will receive careful consideration.

MORE TESTIMONY FROM THE TOMBS!

**Kankakee Daily Republican**

Associated Press Daily Service

KANKAKEE, ILLINOIS, FRIDAY, JUNE 14, 1918

**PROFIT BY THIS**

**Don't Waste Another Day**

When you are worried by backache;
By lameness and urinary disorders—
Don't experiment with an untried medicine.
Follow Kankakee people's example.
Use Doan's Kidney Pills.
Here's Kankakee testimony
Verify it if you wish.

H. C. Ford, 157 W. Chestnut st., Kankakee, says: "I believe heavy lifting weakened my kidneys and caused my back to ache. When I stooped over to lift anything, sharp pains took me in the small of my back and nearly doubled me up. Mornings my back hurt me worse than any other time. My kidneys acted irregularly, the secretions were highly colored and hard to pass. I had severe pains in the back of my head, too. Many times I saw stars when I got up quickly. I bought two boxes of Doan's Kidney Pills at Betourne's Drug Store, and they greatly benefited me and put my kidneys in order."

60c at all dealers. Foster-Milburn Co., Mfgrs., Buffalo, N. Y.

STATE OF ILLINOIS

STANDARD CERTIFICATE OF DEATH

Registered No. 63

1. PLACE OF DEATH: County Kankakee; City Kankakee; No. 293 N. Spot Ave.; Ward

2. FULL NAME: Horace Greeley Ford.

PERSONAL AND STATISTICAL PARTICULARS

3. SEX: male; 4. COLOR OR RACE: White; 5. CONDITION: married

6. DATE OF BIRTH: January 5, 1872

7. AGE: 46 yrs. 2 mos. 14 ds.

8. OCCUPATION: Painter

9. BIRTHPLACE: Indiana

10. NAME OF FATHER: Amborse Ford.

11. BIRTHPLACE OF FATHER: Not Known

12. MAIDEN NAME OF MOTHER: Sarah Johnson

13. BIRTHPLACE OF MOTHER: not known

14. THE ABOVE IS TRUE TO THE BEST OF MY KNOWLEDGE: Mrs H. C. Ford, 293 N. Spot Ave., Kankakee, Illinois.

15. Filed March 21, 1918. O. H. A. Sylvester, Registrar

MEDICAL CERTIFICATE OF DEATH

16. DATE OF DEATH: March 19, 1918

I HEREBY CERTIFY, That I attended deceased from Nov. 1, 1917, to March 19, 1918, that I last saw h 1 alive on March 19, 1918, and that death occurred, on the date stated above, at 10 A.M.

The CAUSE OF DEATH* was as follows: Pulmonary Tuberculosis

Contributory (Secondary)

Signed E. S. Greenleaf, M.D.

Address Kankakee, Illinois.

Date 3/20, 1918. Telephone B.17 1,630

16. LENGTH OF RESIDENCE (For Hospitals, Institutions, Transients or Recent Residents): At place of death yrs. mos. ds. In this city yrs. mos. ds.

Where was disease contracted if not at place of death?

Former or usual residence

18. PLACE OF BURIAL OR REMOVAL: Mound Grove, Kankakee; DATE OF BURIAL: Mar. 21, 1918

19. UNDERTAKER: H. F. Kehr; ADDRESS: Kankakee, Ill.

Mr. Ford's testimonial for Doan's Kidney Pills appeared in a Kankakee paper, June 14, 1918—nearly three months after he was dead and buried! "Follow Kankakee people's example. Use Doan's Kidney Pills," says the advertisement.

**Report on Sickness Prevention.**—The National Industrial Conference Board, in Research Report No. 6, May, 1918, discusses the problem of sickness insurance and sickness prevention, quoting the figures of rejections for physical unfitness in connection with the draft as given out by U. S. Provost Marshal-General Crowder. The report also gives figures and facts brought out in various reports and investigations of industrial accident and injury and preventable illness, most of which have already been reviewed in THE JOURNAL. In connection with sickness insurance, the experience of various European countries, and of new Zealand and Australia is set forth, and recommendations are made with reference to the solution of the problem without giving the details of any definite plan. The report is a brief but valuable contribution to this timely subject, and may be obtained from the office of the board, 15 Beacon Street, Boston.

# Correspondence

## HOUSE ORGAN THERAPEUTICS

*To the Editor:*—My mail is frequently cluttered with pseudo-scientific data from various manufacturers of proprietary remedies which contain as much real scientific information as the *Police Gazette*. I am enclosing a sample page of such a periodical. The article has been so cleverly worded in the first paragraph, as to impress the unthinking with the idea that sodium cacodylate is superior to arsphenamin, when we know in reality that sodium cacodylate has been proved practically worthless in syphilis (*vide* "Venarsen"). One case is reported, in which twenty injections of sodium cacodylate were administered intravenously, from October 23 to December 14. On December 18, a Wassermann test proved negative, it had been strongly positive on October 20, but during the same interval from October 23 to December 14, the patient had been taking by mouth "Ricord pills" each containing half a grain of yellow iodid of mercury; granted that he had taken these pills regularly, during all that time, it might well be that the Wassermann would be sharply influenced by them. Again, a negative Wassermann in the midst of treatment proves little; it might be positive again in a few days. The article stimulates the further use of a product of known worthlessness in the treatment of syphilis. How any one can use sodium cacodylate in preference to arsphenamin in syphilis is beyond me. If I mistake not, the Propaganda Department has not taken up the matter of these various pamphlets of the drug companies, such as the *Doctor's Factotum, Therapeutic Notes*, etc., lauding to the skies such articles as "Seng," "Cactina Pillets," etc., *ad nauseam*. The saddest part of the whole thing is that it must bring returns from the unthinking, otherwise they would soon disappear, which would be a great relief for the scrubwomen who empty our waste baskets.

PAUL E. BECHET, M.D., New York.

[COMMENT.—The "sample page" sent by Dr. Bechet is from the March-April, 1918, number of P. D. & Co's. *Therapeutic Notes*. It contains an "Original Communication" on "The Treatment of Syphilis with Sodium Cacodylate, by Adolph Lappner, M.D., Detroit, Mich." The "article" while nominally devoted to the praise of sodium cacodylate is virtually a puff for "Ricord Pills," a Parke, Davis & Co. product.]

## THE CORRECT SHOWER BATH

*To the Editor:*—During recent visits to several camps and forts of the United States Army, I was surprised to discover that all showers were arranged perpendicularly, and that they were so built in accordance with the Quartermaster's Manual, second volume, page 351, despite the fact that the public bathhouses of this country have since their initiation in 1890 proved the absolute superiority of the oblique shower head (at an angle of 45 degrees).

There is no doubt in the minds of those who have given this subject any thought that while the vertical shower may serve equally well for cleansing, it fails in the equally if not more important object of the shower, to furnish the refreshment and invigoration produced by the forcible impact of water on the skin nerves, vessels and muscular structures. Since the latter depends on the force or pressure under which the water is delivered, it is obvious that this beneficent action is precluded because of the fact that no matter how strong the pressure the water falls with force only on the hairy scalps, from which it trickles on the body. The oblique shower, on the contrary, strikes the back, chest or sides, avoiding the head unless the head is intentionally exposed for cleansing.

The great enhancement of efficiency among our industrial workers and our soldiers derivable from the correctly constructed shower cannot at this time be too much emphasized or too quickly brought to the attention of the authorities.

That the antiquated shower head is still in use in the Army and other recently constructed public bath establishments is evidence not only of the force of habit but unfortunately also of the fact that the rationale of the action of water in health and disease is still a *terra incognita* among otherwise well informed men.

There is something more, indeed much more, in the shower bath than its cleansing in a sanitary way, just as there is something more in the cold bath in typhoid fever than temperature reduction (which happily is being recognized of late). That there is something far more important in thermic fever than reduction of abnormally high temperature has been painfully demonstrated by the largest statistics of an epidemic (648 cases) which I endeavored to utilize as a lesson (Principles and Practice of Hydrotherapy, William Wood & Co.) in 1898. And yet the fifteenth edition of the most popular American textbook on practice still teaches the heresy that reduction of temperature by the cold bath is the best treatment of thermic fever (although the German translation of the eighth edition has a footnote exposing this fallacy), and nearly every textbook on practice teaches the same fallacious and fatal treatment. It may be mentioned, incidentally, that the cold shower or affusion reduced the mortality from this disease from 38 to 6 per cent.

It is gratifying to state that the Surgeon-General of the United States Army, and its Quartermaster-General and the head of the Bureau of Industrial Housing, have taken cognizance of my appeal to them for correction of this physiologically incorrect construction of the shower.

SIMON BARUCH, M.D., New York.

## "SODIUM VERSUS POTASSIUM"

*To the Editor:*—Your editorial in the issue of June 1 on "Sodium Versus Potassium" is both illuminating and suggestive, and illustrates the point that our boche friends have been working the American public in a manner that is shameful in this matter of the potassium salts. As you say, we are creatures of habit, and their clever propagandists have taken advantage of this to persuade us that the K salts are superior to those of the Na group, whereas, quite the contrary, the latter group is every bit as effective and less depressing. In order to obviate this fallacy I would suggest that you keep standing on your editorial page some such brief text as the following:

American doctors should

HELP WIN THE WAR

by prescribing sodium salts for the States and let the Prussians prescribe potassium salts for Potsdam! Sodium is produced in America, is less depressing than potassium, is quite as effective, and is 50 per cent. cheaper!

You no doubt could influence other medical journals and also the chemical and pharmaceutical publications to follow your example and thus help materially in putting the Hun out of business.

WILLIAM D. BYRNE, M.D., Chicago.

## ADVANTAGES GAINED BY SERVICE IN MEDICAL RESERVE CORPS

*To the Editor:*—Are there many of our young physicians hesitating about entering the service? The recent letter appearing in the medical press from the office of the Surgeon-General asking for more medical men has, I believe, met a generous response. However, having spent a week here as the guest of the surgical staff of the base hospital, I have been impressed with the advantages there are for those who enter the service. No postgraduate course can equal it. No clinic is as complete in system and organization. It is the realization of any physician's fondest hopes. It is going to give America a splendidly improved medical profession. It teaches a system of efficiency that will be an asset after returning to civil practice. It is surely worth the while.

J. CHRISTOPHER O'DAY, M.D., Camp Lewis, Wash.

# Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

## PERMANENCE OF MEDICAL RESERVE CORPS, AND DETAILS OF ADMISSION

To the Editor:—1. Will the Medical Reserve Corps be disbanded entirely at the close of the war? If not, will the commissioned officers be given the opportunity of remaining in the service if they so desire?

2. Is it permissible for a commissioned officer of the United States Public Health Service to apply for a commission in the Medical Reserve Corps, or for examination for the Medical Corps of the Regular Army, without first obtaining permission to do so from the Surgeon-General of the Public Health Service?

3. Does the age limit for entrance to the Medical Corps (32 years) mean that an officer must be examined and be commissioned before he reaches his thirty-second birthday?

4. How long a time would probably elapse between the time of application for permission to take the examination for the Medical Corps of the Army and, in the event of success in the examination, the time of commission? How long between the date of application for commission in the Medical Reserve Corps and the date of assignment to active service?

5. If an officer makes known his preference for any branch of medical work or for foreign service, has he any assurance that this preference will be given consideration?

6. Does the recent act permitting commissioned officers of the Army to buy supplies from the Quartermaster's Department apply to officers of the United States Public Health Servic? Please omit my name.

S. S. C., South Carolina.

ANSWER.—1. The Medical Reserve Corps is a permanent organization. Physicians enlist for a term of five years, and at the end of that period can be recommissioned if they desire.

2. A commissioned officer of the United States Public Health Service should apply for permission to the Surgeon-General of that service before undertaking to secure a commission in another service of the government.

3. Presumably, yes; but probably the application would be favorably considered if the candidate was otherwise qualified.

4. Following the preliminary examination, applicants who are successful are appointed to the Reserve Corps with the rank of first lieutenant and ordered to active duty at the Army Medical School, Washington, D. C., for instruction as candidates for admission to the Medical Corps of the Army. The applicant is required to make an agreement to accept a commission in the Medical Corps, if found qualified in the final examination, for at least five years thereafter unless sooner discharged. Candidates under consideration receive the pay allowances of first lieutenants. A final or qualifying examination of the graduates is held by the Army Medical Board immediately after the close of the term of the Army Medical School. It covers the candidate's physical qualities, clinical skill and general aptitude for the service. If successful, he is at once given a commission in the Medical Corps.

5. After the acceptance of his commission in the Medical Reserve Corps, the officer will receive from the Office of the Surgeon-General a questionnaire on which he will be permitted to state his preference and aptitude for various branches of medical service and his special training in these branches. An endeavor will then be made to assign him to the work for which he is especially fitted.

## PUBLICATIONS ON PSYCHIATRY, NEUROLOGY, CRIMINOLOGY AND PSYCHOLOGY

*To the Editor:*—I should be greatly pleased if you would furnish me with a list of the leading journals on the subjects of psychiatry, neurology, criminology and psychology; also a list of new books on these subjects.

R. M. C., Kansas.

ANSWER.—We give below a list of journals and books on these subjects:

*American Journal of Insanity*, quarterly, Johns Hopkins Press, Baltimore, $5.
*American Journal of Psychology*, quarterly, G. Stanley Hall, editor, Worcester, Mass.
*Brain*, the Macmillan Company, St. Martin's St., London, W. C., 16 shillings.
*Journal of Abnormal Psychology*, bimonthly, R. G. Badger, 194 Boylston St., Boston, $4.
*Journal of the American Institute of Criminal Law and Criminology*, bimonthly. Northwestern University Press, 31 W. Lake St., Chicago, $3.
*Journal of Nervous and Mental Diseases* monthly, 64 West 56th St., New York, $8.
*Mental Hygiene*, quarterly, National Committee of Mental Hygiene, 50 Union Square, New York, $2.
*Psychological Bulletin*, monthly, Psychological Review Company, Worcester, Mass.
*Review of Neurology and Psychiatry*, monthly, 20 S. Frederick St., Edinburgh, 25 shillings.
Adler, A.: Study of Organ Superiority and Its Psychical Compensation, Nervous and Mental Disease Publishing Company, 64 West 56th St., New York, $1.50.
Adler, A.: The Neurotic Constitution, Moffat, Yard & Co., 116 West 32d St., New York, $3.
Bronner, A. F.: The Psychology of Special Abilities and Disabilities, Little, Brown & Co., Boston, $1.75.
Estabrook, A. H.: Jukes in 1915, Carnegie Institution, Washington, D. C., $2.50.
Healy, W.: Mental Conflicts and Misconduct, Little, Brown & Co., 34 Beacon St., Boston, $2.50.
Healy W., and Healy, Mary T.: Pathological Lying, Accusation and Swindling, Little, Brown & Co., Boston, $2.50.
Healy, W.: The Individual Delinquent, Little, Brown & Co., Boston, $5.
White, W. A.: Mechanism of Character Formation; An Introduction to Psychoanalysis, the Macmillan Company, 66 Fifth Ave., New York, $1.75.

## THE "ITALIAN CONSUMPTION CURE"

*To the Editor:*—Will you please let me know through THE JOURNAL where I can find a scientific account of the enclosed "Consumption Cure Found by Italian"?

LOUIS SHALET, M.D., West New York, N. J.

ANSWER.—The matter enclosed with Dr. Shalet's letter was a clipping from the New York *Times* of June 30, 1918, purporting to give an account of a new alleged cure for pulmonary tuberculosis said to have been "discovered" by Prof. Domenico Lo Monaco of Rome. The article, in its essentials, was similar to numerous other articles that have appeared in the daily press during the past few weeks. According to the newspaper reports the treatment consists of the subcutaneous injection of sugar—the particular form of sugar not being specified. Although THE JOURNAL regularly receives a large number of Italian medical journals, as well as medical journals from other European countries, no reference has been found in these scientific publications to this latest "discovery."

## THE CHANCES FOR PHYSICIANS OF MIDDLE AGE BEING SENT ABROAD

*To the Editor:*—I have been informed by the examiner for the Medical Reserve Corps in Denver that at my age, 43, there is no chance for me to get into foreign service if I offer my services to the government. Kindly inform me whether this is true, and send me all the data possible in the matter, as I wish to offer my services, but want some chance for foreign service.

D. O. N., Colorado.

ANSWER.—It is not strictly accurate to state that a man 43 years of age will not be sent abroad, since a number of physicians beyond this age are already abroad, and others are no doubt being sent quite frequently. In general, it appears to have been the policy to send younger men, and those not so well qualified physically for the work have been utilized in this country. However, no absolute rule of age discrimination exists, so far as we know.

## BASS AND HALL METHOD FOR DETECTING EGGS OF NECATOR AMERICANUS

*To the Editor:*—Please give briefly the Bass method of concentrating the eggs of the *Necator americanus* by specific gravity. Please omit my name.

H. A. G.

ANSWER.—The method for detecting the eggs, described by Bass and Hall, is to mix the feces thoroughly with ten times the volume of water, filter through gauze, centrifugalize the filtrate, wash the sediment, and centrifugalize. This is repeated twice. To the sediment is added calcium chlorid solution having a specific gravity of 1.250; the eggs will float to the surface. The surface fluid is poured off and diluted with water until the specific gravity is 1.050. After centrifugalization, the sediment, which will contain practically all the eggs in the stool, is examined.

## WORTHLESSNESS OF NONVIRULENT TUBERCULOSIS VACCINE IN TREATMENT OF TUBERCULOSIS

*To the Editor:*—What are the views of the best physicians in regard to the treatment of tuberculosis with nonvirulent tuberculosis vaccine?

ROBERT L. KENNEDY, M.D., Bascom, Fla.

ANSWER.—There is no question that all who are competent to judge agree in holding this vaccine as absolutely worthless and, indirectly at least, harmful.

# Medical Education and State Boards of Registration

## REPORT OF THE FIFTH EXAMINATION NATIONAL BOARD OF MEDICAL EXAMINERS

**Fort Riley, Kan., and Fort Oglethorpe, Ga., April 8-25, 1918**

The fifth examination of the National Board of Medical Examiners was held in the Medical Officers' Training Camps at Fort Oglethorpe, Ga., and Fort Riley, Kan., April 8-25. The written examinations were held simultaneously in the two places. The laboratory and clinical examinations immediately followed the written examination at the former camp, while at Fort Riley this part of the examination was held from the 19th to the 25th of April. The subjects of the examination and the relative value of each were: anatomy, 100; physiology, 75; chemistry, 75; pathology, 75; bacteriology, 50; materia medica, pharmacology and therapeutics, 75; medicine 200; surgery, 200; obstetrics and gynecology, 75; hygiene and sanitation, 50, and medical jurisprudence, 25. A percentage of 75 was required to pass. Falling below 65 per cent. in two subjects, or below 50 in one subject, constituted failure.

There were fifty-three applicants who applied for examination. Twenty-three were found to have the essential preliminary and medical qualifications, and of these eighteen passed and five failed. The following colleges were represented:

PASSED

| Names | Colleges | Year of Graduation |
|---|---|---|
| Clarence Van Epps | Univ. of Iowa, and Univ. of Penna | 1897 & 1898 |
| Burton Argyle Baird | Univ. of Iowa | 1915 |
| John Poag Tucker | Western Reserve Medical School | 1916 |
| Spencer Draper Whiting | Boston Univ. School of Medicine | 1905 |
| Herman Alfred Heise | Rush Medical College | 1917 |
| Wm. Nance Anderson | Univ. of Nebraska College of Medicine | 1910 |
| Chas. W. Rauschenbach | University of Maryland | 1912 |
| William Cromwell Ely | University of Pennsylvania | 1916 |
| Whitman King Coffin | Harvard Medical School | 1912 |
| Reuben M. Hargrove | Univ. of Texas Medical School | 1912 |
| Paul Brandt Roen | Univ. of California Medical School | 1914 |
| Chas. John Harbeck | Columbia Univ. Coll. of Phys. and Surgs. | 1905 |
| John Shaffer Simms | Rush Medical College | 1911 |
| Clarence Henry Hyman | Harvard Medical School | 1916 |
| Albert Warner Dewey | Medical School Univ. of Colorado | 1917 |
| Pio Blanco | Johns Hopkins Medical School | 1916 |
| Walter H. Halloran | University of Minnesota Med. School | 1915 |
| Harry Leroy Smith | State University of Iowa Medical School | 1916 |

FAILED

| Colleges | Year |
|---|---|
| Northwestern University | 1907 |
| Jefferson Medical College | 1907 |
| Indiana University Medical School | 1913 |
| University of Minnesota Medical School | 1913 |
| Rush Medical College | 1916 |

AVERAGES OBTAINED

| Card Number | Anatomy; Value, 100 | Chemistry; Value, 75 | Mat. Med., Phar. and Ther.; Value, 75 | Obstetrics; Value, 75 | Hygiene; Value, 50 | Medicine; Value, 200 | Surgery; Value, 200 | Pathology; Value, 75 | Bacteriology; Value, 50 | Physiology; Value, 75 | Medical Jurisprudence; Value, 25 | Final Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 80 | 85 | 79 | 76 | 81 | 78 | 85 | 77 | 60 | 93 | 56 | 80.0 |
| 3 | 91 | 90 | 87 | 76 | 60 | 90 | 86 | 74 | 82 | 81 | 70 | 83.6 |
| 4 | 89 | 90 | 81 | 80 | 82 | 80 | 86 | 77 | 94 | 94 | 89 | 84.9 |
| 5 | 90 | 75 | 86 | 81 | 82 | 85 | 85 | 81 | 78 | 70 | 66 | 82.1 |
| 6 | 84 | 75 | 82 | 77 | 85 | 89 | 83 | 75 | 58 | 86 | 70 | 81.3 |
| 8 | 89 | 90 | 92 | 76 | 57 | 87 | 92 | 83 | 76 | 94 | 72 | 85.6 |
| 9 | 81 | 80 | 91 | 75 | 74 | 85 | 90 | 87 | 68 | 84 | 72 | 83.1 |
| 14 | 68 | 42 | 84 | 76 | 67 | 84 | 71 | 72 | 54 | 67 | 76 | 71.3 |
| 3 | 77 | 64 | 87 | 75 | 50 | 81 | 83 | 83 | 78 | 77 | 84 | 78.2 |
| 5 | 90 | 85 | 86 | 71 | 85 | 90 | 91 | 96 | 74 | 85 | 96 | 87.5 |
| 12 | 75 | 90 | 85 | 76 | 79 | 90 | 92 | 80 | 68 | 87 | 80 | 84.4 |
| 13 | 52 | 36 | 70 | 60 | 68 | 78 | 72 | 81 | 54 | 77 | 72 | 67.5 |
| 14 | 68 | 42 | 84 | 76 | 67 | 84 | 71 | 72 | 54 | 67 | 76 | 71.3 |
| 15 | 55 | 50 | 78 | 73 | 62 | 80 | 78 | 69 | 66 | 74 | 72 | 71.8 |
| 20 | 42 | 60 | 77 | 75 | 60 | 80 | 74 | 80 | 76 | 77 | 80 | 72.0 |
| 23 | 78 | 65 | 86 | 77 | 66 | 79 | 72 | 83 | 72 | 82 | 80 | 76.4 |
| 35 | 67 | 60 | 78 | 76 | 35 | 89 | 76 | 42 | 56 | 75 | 80 | 71.1 |
| 41 | 89 | 80 | 86 | 77 | 84 | 87 | 85 | 89 | 74 | 80 | 80 | 84.0 |
| 43 | 83 | 70 | 93 | 80 | 78 | 88 | 78 | 79 | 82 | 81 | 88 | 81.9 |
| 49 | 70 | 76 | 84 | 85 | 70 | 89 | 81 | 81 | 74 | 83 | 76 | 80.7 |
| 50 | 67 | 85 | 86 | 51 | 68 | 86 | 86 | 85 | 68 | 79 | 76 | 78.4 |
| 53 | 86 | 80 | 93 | 80 | 77 | 92 | 89 | 90 | 90 | 92 | 88 | 88.1 |
| 55 | 65 | 75 | 80 | 91 | 78 | 73 | 81 | 58 | 72 | 75 | 84 | 85.5 |
| Gen. aver. by subjects | 75.8 | 73.2 | 84.1 | 75.6 | 70.6 | 84.9 | 81.5 | 78.6 | 73.5 | 81.4 | 77.3 | |

General average of candidates is based on subject values as rated by the board.

EXAMINATIONS AND TIME ALLOWED

| Subject | Kind of Examination | |
|---|---|---|
| | Written | Other, and Remarks |
| Anatomy | 3 hours | Oral with prepared Spec. 20 min. for each candidate |
| Chemistry | 3 hours | Two hours laboratory in physiologic chemistry |
| Physiology | 3 hours | Laboratory 2 hours |
| Pathology | 3 hours | Laboratory exam., 20 min. each cand. |
| Bacteriology | 2 hours | Laboratory 2 hours |
| Materia medica, pharmacology and therapeutics | 3 hours | Laboratory 2 hours |
| Medicine | 3 hours | Clinical lab., 1 hour, each cand.; clinical med., 3 hours |
| Surgery | 3 hours | Lab. op. surg. and applied anatomy, 3 hours; clin. exam., 3 hours |
| Eye, ear, nose and throat | | Clinical exam., 30 min. each candidate |
| Dermatology | | Clinical exam., 30 min. each candidate |
| Obstetrics and gynecology | 3 hours | |
| Hygiene | 2 hours | |
| Medical Jurisprudence | 2 hours | |

### New York January Examination

Mr. George M. Wiley, director, Examinations and Inspections Division, New York Department of Education, reports the written examination held at Albany, Buffalo, New York and Syracuse, in January, 1918. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 103 candidates examined, 60 passed and 43 failed. The following colleges were represented:

| College | PASSED | Year Grad. | No. Examined |
|---|---|---|---|
| Rush Medical College | | (1917) | 1 |
| Tulane University | | (1913) | 1 |
| Johns Hopkins University | | (1904) (1916) (1917) | 3 |
| Tufts College Medical School | | (1915) (1916) | 2 |
| University of Michigan Homeo. Med. School | | (1917) | 1 |
| Albany Medical College | | (1915) (1916) (1917) | 3 |
| Columbia University | | (1916, 2) (1917, 4) | 6 |
| Cornell University | | (1915) (1916) | 2 |
| Fordham University | | (1913) (1915) (1916) (1917, 3) | 6 |
| Long Island College Hospital | | (1917, 3) (1918, 2) | 5 |
| N. Y. Homeo. Med. Coll. and Flower Hosp. | | (1916, 4) (1917) | 5 |
| New York Med. Coll. and Hosp. for Women | | (1916) | 1 |
| Univ. and Bellevue Hosp. Med. Coll. | | (1915) (1916) (1917, 2) | 4 |
| University of Buffalo | | (1917) | 6 |
| University of the City of New York | | (1890) | 1 |
| University of Oklahoma | | (1916) | 1 |
| Jefferson Medical College | | (1904, 2) (1917) | 3 |
| Medico-Chirurgical College of Philadelphia | | (1908) (1916) | 2 |
| University of Pennsylvania | | (1906) (1916) | 2 |
| University of Vermont | | (1917) | 1 |
| Medical College of Virginia | | (1911) | 1 |
| Queen's University | | (1917) | 1 |
| McGill University | | (1914) | 1 |
| University of Bonn | | (1890) | 1 |
| | FAILED | | |
| Atlanta Medical College | | (1914) (1917) | 2 |
| Chicago Homeo. Medical College | | (1896) | 1 |
| Johns Hopkins University | | (1917) | 1 |
| Boston University | | (1912) | 1 |
| Harvard University | | (1914) (1915) | 2 |
| Tufts College Medical School | | (1902) (1917) (1913) | 3 |
| University of Michigan Homeo. Med. School | | (1914) | 1 |
| Albany Medical College | | (1917) | 2 |
| Columbia University | | (1915) (1916) | 2 |
| Fordham University | | (1913) (1916, 4) (1917) | 6 |
| N. Y. Homeo. Med. Coll. and Flower Hosp | | (1913) (1915) (1916, 3) (1917, 3) | 8 |
| New York Med. Coll. and Hosp. for Women | | (1917) | 1 |
| University and Bellevue Hosp. Med. Coll. | | (1917) | 1 |
| University of Buffalo | | (1917) | 3 |
| Eclectic Medical College | | (1916) | 1 |
| Medical College of Virginia | | (1915) | 2 |
| Queen's University | | (1914) (1916) | 2 |
| McGill University | | (1900) (1915) | 2 |
| Royal University of Naples | | (1908) | 1 |
| University of Bologna | | (1912) | 1 |

Mr. George M. Wiley also reports that 4 candidates were licensed through reciprocity and 1 candidate was granted a reregistration license, from Feb. 27 to April 15, 1918. The following colleges were represented:

| College | LICENSED THROUGH RECIPROCITY | Year Grad. | Reciprocity with |
|---|---|---|---|
| New York Homeo. Med. Coll. and Flower Hosp. | | (1915) | Delaware |
| Jefferson Medical College | | (1912) | New Jersey |
| Vanderbilt University | | (1916) | Virginia |
| University of Virginia | | (1916) | Virginia |

## Book Notices

Der histologische Bau der Vogelschnecke und ihre Schädigung durch akustische Reize und durch Detonation. Von Dr. Nobuo Satoh. Arbeit aus dem Laboratorium der physiologischen Anstalt (Prof. Metzner) und der oto-laryngologischen Klinik (Prof. Siebenmann) der Universität Basel. Boards. Pp. 48, with 61 illustrations. Basel: Benno Schwabe & Co., 1917.

A glance at the contents of this book shows its great importance to different branches of medical science. The first part deals with the normal histologic condition of the labyrinth of birds, fixated intra vitam. In an introduction the technic of the fixation of the labyrinth of birds in the living is given, its decalcification, embedding, cutting and staining. This is followed by a description of the microscopic structure of the labyrinth of birds. The second part, on the experimental investigation of the injuries of the bird's organ of hearing by means of acoustic overirritation, is at present of special interest when the questions of shell shock are discussed from every angle. The experiments are carefully described, the microscopic findings given and shown in drawings, and the conclusions drawn free from all speculation. Twelve plates with fifty-five colored illustrations of unusually careful artistic execution help clarify a difficult subject. This is a completely rounded out continuation of similar investigations on mammals from the same laboratories of Siebenmann by Nager, Yoshii and Nakamura. It solves a number of questions which were left open or even seemed insoluble. The short, clear diction and the drawings repay fully for the time devoted to a careful study. Questions of priority are not discussed, and mistakes of others are not criticized but avoided. For example, in spite of the earliest possible fixation, changes of the sensory epithelium were observed less than one hour after death. It is remarkable that Switzerland at the present juncture finds time and money for scientific work which requires the cooperation of professors, technician, artist and publisher.

Principles of Surgical Nursing. A Guide to Modern Surgical Technic. By Frederick C. Warnshius, M.D., F.A.C.S., Chief Surgeon, Pere Marquette Railway. Cloth. Price, $2.50 net. Pp. 277, with 255 illustrations. Philadelphia: W. B. Saunders Company, 1918.

The author has attempted to impart briefly the essential, basic principles of surgical nursing, relying largely on illustrations to aid the concise statements in the text. The work is divided into nineteen chapters, beginning with the preparation of a room and its equipment in a private house, taking up the preparation of the patient, the duties of the nurse before, during and after operation, anesthesia, the preparation of materials, the surgeon's kit, catheterization, the operation for appendicitis, and various hospital methods. The book throughout is rational and follows generally accepted procedure. An excellent table appears on page 135, giving common postoperative complications and their usual sequence. This should be of great service to the nurse in putting her on guard against these conditions. There are in all 255 illustrations, which are distributed over 267 pages, a veritable motion picture method of instruction, and one which is intensely practical. The chapter on hospital methods is composed almost entirely of illustrations, and should be most convenient in teaching the nurse these necessary procedures.

Memoranda on Army General Hospital Administration. By Various Authors. Edited by P. Mitchell, M.D., Lieutenant-Colonel, R. A. M. C. (T. F.), Officer Commanding No. 43 General Hospital. Cloth. Price, 5 shillings, net. Pp. 109, with illustrations. London: Baillière, Tindall and Cox, 1917.

"The primary object of the Army hospitals," says the author, "is to get the disabled, physically and mentally, fit to fight again." Obviously, therefore, the administration of Army general hospitals is a most important factor in winning the war. It has apparently been the policy of our own Medical Department to place regular medical officers in the medical administrative positions, and to leave the scientific and clinical medical work to the large body of physicians drawn from civilian life. Unfortunately, however, there were less than 500 regular medical officers available at the beginning of the war, a number far from sufficient for the administrative work. It was necessary, therefore, to train civilian physicians in Army administrative methods, and this work is now being done both in special training camps and by placing these physicians in the work so that they may learn from their errors the correct methods. Mitchell's book is not based on American Army methods, but is a description of the English system of organization. The problems of an English general hospital are much the same as those of an American organization. The book, therefore, will be of value to American officers as a reference work; it is not, however, to be studied, since the forms, the apparatus and the equipment referred to are not directly applicable to the problems of the American officer.

American Encyclopedia and Dictionary of Ophthalmology. Edited by Casey A. Wood, M.D., C.M., D.C.L., Professor of Ophthalmology, College of Medicine, University of Illinois. Volume XII—Ophthalmology, Legal Relations of, to Phonopticon, Crystal. Cloth. Price, $8. Chicago: Cleveland Press, 1918.

Among the important articles in this volume of the encyclopedia are those on the literature of ophthalmology, in which a consecutive account of the development of ophthalmologic works, journals, etc., from early history to the present, is given; the ophthalmoscope and ophthalmoscopy, an extensive article, quite thoroughly covering the field; the orbit, its diseases and injuries, and operations on the orbit; ocular parasites, an extensive article, reminding the ophthalmologist of the comparative frequency and great variety of parasites invading the eye; Parinaud's conjunctivitis; a historical article on Paul of Aegina, with an enumeration of the eye subjects that he described, and comments on them; the perimeter and perimetry, an extended article with an extensive bibliography on an important subject; and a brief but good article on the optic nerve, its diseases, degenerations, injuries, etc., all of which are up to the well maintained standard of the previous volumes.

A Manual of Clinical Diagnosis by Means of Laboratory Methods for Students, Hospital Physicians and Practitioners. By Charles E. Simon, B.A., M.D., Professor of Clinical Pathology and Physiological Chemistry in the University of Maryland Medical School. Ninth edition. Cloth. Price, $6. Pp. 851, with 235 illustrations. Philadelphia: Lea & Febiger, 1918.

The ninth edition of this time-tried text has brought it up to date. Numerous colored illustrations have been added which should be of great value to the student in correlating his textbook with his laboratory exercises.

## Medicolegal

### Osteopath Not a Physician and Surgeon

*(Ex parte Rust (Calif.), 169 Pac. R. 1050)*

The District Court of Appeal of California, First District, says that the return of the sheriff to the writ of habeas corpus applied for in this case showed that the petitioner was held on a commitment of the police court of the city and county of San Francisco for violating the law regulating the practice of optometry. In support of his demand that he be discharged from custody he contended that by virtue of his being the holder of a certificate entitling him to practice osteopathy, he was by the terms of the act itself regulating the practice of optometry excepted from its prohibitory provisions. The exception referred to was contained in Section 10 of said act, and is: "The provisions of this act shall not be construed to prevent duly licensed physicians and surgeons from treating or fitting glasses to the human eye." The question to be determined, then, was whether an osteopath, licensed under the statute regulating that profession, was within the purview of the optometry law a licensed physician and surgeon. The act of 1913 regulating the practice of medicine and surgery provides for the examination of persons desiring to follow these professions, and for the issuance of two forms of certificate, one designated a "physician and surgeon certificate," and the other a "drugless practitioner

certificate." The distinction between these certificates is quite marked, and they are issued as the result of a different examination; and it is very apparent to the court that the term "duly licensed physicians and surgeons," as used in the section of the act above quoted, has direct reference to the holders of the former class of certificates to the exclusion of the holders of the latter. The cases cited by the petitioner from other jurisdictions holding that an osteopath may be said to engage in the practice of medicine and surgery had no application to the facts in this case, in which the question was much narrower and was one of statutory construction. Under the statute the court is clearly of the opinion that the petitioner was not a "duly licensed physician and surgeon," wherefore it was ordered that the writ be discharged and the petitioner remanded to the custody of the sheriff.

### Damages for Alleged Negligence in Treatment of Dislocation

(*McCann v. Twitchell* (*Me.*), *102 Atl. R. 740*)

The Supreme Judicial Court of Maine overrules the defendant's exception and motion for a new trial after the jury returned a verdict in favor of the plaintiff for $4,900 damages for alleged malpractice in the setting and treatment of his left arm by the defendant. The ulna of the arm had been broken and the radius dislocated by the plaintiff, aged 30 years, having been thrown from an automobile, and he claimed that the defendant, who took charge of his case, negligently failed to discover the dislocation and did not properly treat it after he did know of it. The defendant testified that he suspected there might be a dislocation of the head of the radius, but that the arm was so much swollen that he could not then determine that, and that he did not feel it was safe to etherize the plaintiff owing to his physical condition then as indicated by his breathing; and that he, and not the plaintiff, suggested that the roentgen ray be used. The court says that it would serve no useful purpose to attempt any extended analysis of the evidence bearing on the issues of fact in the case. No legal propositions by which the defendant was bound in the discharge of his duty to the plaintiff were in dispute. It was not urged that he did not possess the ordinary skill of members of his profession in like situation. He was bound to exercise ordinary skill and reasonable care and diligence in his treatment of the case, and to use his best judgment in the application of his skill to the case. Whether or not he did that was an issue of fact for the jury. They decided that issue in the plaintiff's favor. Nor does a careful study of the evidence satisfy the court that their verdict was wrong, either as to the defendant's liability, or as to the amount of damages awarded the plaintiff. Evidence was introduced tending to show that the plaintiff's disbursements and liabilities necessarily incurred on account of the injuries to his arm amounted to nearly $1,400; his suffering was severe and long continued, and his arm was permanently crippled, though somewhat serviceable. Assuming, though not so deciding, that it was error for the plaintiff to testify that the defendant said, in conversation with him concerning his liability for negligence in treating the arm, that the plaintiff could do him no harm as he was protected by a liability insurance, the court thinks that such error should not be deemed a sufficient ground for a new trial in view of the fact that the presiding justice, on his own motion, and soon after the admission of the statement, ordered it struck from the record and instructed the jury to pay no attention to it in their consideration of the case, explaining to them fully why they should not do so.

## Society Proceedings

### COMING MEETINGS

American Academy of Ophth. and Oto-Laryn., Denver, Aug. 6-8.
Idaho State Medical Association, Seattle, July 17-19.
Minnesota State Medical Association, Duluth, Aug. 28-30.
Oregon State Medical Association, Seattle, July 17-19.
Tri-State District Medical Society, Madison, Wis., Aug. 20-22.
Washington State Medical Association, Seattle, July 17-19.
Wyoming State Medical Society, Casper, Aug. 7.

## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (*) are abstracted below.

#### American Journal of Public Health, Boston

June, 1918, **8**, No. 6

1 Medical Officers Training Camp. E. S. Tenney, Fort Riley, Kan.—p. 401.
2 Rural Health Administration Under Cooperative or Local Health District Plan. G. F. Ruediger.—p. 406.
3 Rural Health Administration Under State Health District Plan. F. W. Sears, Albany.—p. 412.
4 Health Publicty an Aid to Cooperation Between Health Department and Citizen. J. W. Trask, Washington, D. C.—p. 417.
5 Mosquito Control in New Jersey. R. H. Hunt.—p. 421.
6 Sanitation of Swimming Pools. C. E. Smith, Jr., and H. M. Schoberg, St. Paul, Minn.—p. 424.
7 Standards for Prevention of Compressed Air Illness. S. Erdman, New York.—p. 431.
8 Recent Progress in Ventilation. F. Bass.—p. 434.
9 Prevention of Hay Fever as National Problem. W. Scheppegrell, New Orleans.—p. 437.
10 Medical Department Records, Morbidity Reports and Vital Statistics of Navy. J. R. Phelps.—p. 442.

#### Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1917, **26**, No. 4

11 Bone Metaplasia in Tonsil. H. Albert and M. G. Douglas, Iowa City, Iowa.—p. 909.
12 Double Otitis Media: Submiliary Pulmonary Tuberculosis. E. Amberg, Detroit.—p. 933.
13 Tubercular Mastoiditis—Radical Operation Under Cocain Anesthesia. H. Hays, New York.—p. 938.
14 Ozena and Asphyxiating Gas; New Etiologic Standpoint. M. Natier, Paris, France.—p. 942.
15 Carcinoma of External Ear; Report of Case. F. Warner, Columbus, Ohio.—p. 950.
16 Abscess of Lung Following Tonsillectomy. C. W. Richardson, Washington, D. C.—p. 961.
17 Obscure Syphilitic Manifestitations in Nasal Cavities. D. Roy, Atlanta, Ga.—p. 967.
18 Case of Meningitis with Unusual Features. C. E. Perkins, New York.—p. 978.
19 Intranasal Operation for Chronic Dacryocystitis. C. F. Bookwalter.—p. 982.
20 Mastoid Cases from Roentgenologic Standpoint. G. S. Dixon, New York.—p. 986.
21 Dentigerous Cysts; Report of Case. I. Frank, Chicago.—p. 991.
22 Subacute Mastoiditis. H. B. Blackwell, New York.—p. 999.
23 Case of Meningitis of Otitic Origin. A. Kahn, New York.—p. 1004.
24 Treatment of Progressive Deafness from Chronic Secretory Otitis Media. F. P. Emerson, Boston.—p. 1007.

#### Boston Medical and Surgical Journal

June 20, 1918, **178**, No. 25

25 Socialization of Practice of Medicine. M. Standish, Boston.—p. 837.
26 Adequate Community Organization for Health Educational Work. M. A. Abel, Framingham.—p. 850.
27 Relative Values in Antituberculosis Work. C. M. Hilliard, Boston.—p. 853.
28 Annual Report of Massachusetts Antituberculosis League, 1918. E. M. Spofford, Boston.—p. 858.
29 Follow-Up Work in Tuberculosis in Small Town and Villages in Massachusetts. B. M. Billings, Boston.—p. 861.
30 War and Tuberculosis. C. J. Hatfield, Philadelphia.—p. 863.
31 Conservation of Man Power in Industry. A. M. Staebler, Boston.—p. 868.
32 Idiopathic Epilepsy a Sympathicopathy. E. A. Tracy.—p. 871. To be continued.

#### Bulletin of Johns Hopkins Hospital, Baltimore

June, 1918, **29**, No. 328

33 *Effect of Forced Feeding on Nitrogen Equilibrium and Blood in Pernicious Anemia. H. O. Mosenthal, Baltimore.—p. 129.
34 Clinical Significance of Various Cells and Parasites in Blood Stream and Production of Abortive Leukemic Changes and of Splenomegaly in Macacus Rhesus. A. W. Sellards and W. A. Baetjer, Baltimore.—p. 135.

33. **Effect of Forced Feeding on Nitrogen Equilibrium and Blood in Pernicious Anemia.**—Three patients who had pernicious anemia were put on high diets. The food was made as appetizing as possible, the personal wishes of the patients were consulted and no attempt was made to maintain a definite proportion of proteins, fats or carbohydrates. These

patients were all kept under strict supervision in a small metabolism ward. They remained in bed, thus establishing their metabolic requirements at as low a level as possible. The only medication which they received was dilute hydrochloric acid. In one case transfusions were given. There was no difficulty encountered at any time during the observation in bringing about an extensive assimilation of nitrogen. One of the patients retained 3.4 gm. of nitrogen a day for twenty-eight days, another, 3.4 gm. a day for thirty-two, and the third 6.8 gm. a day for thirty-six days. In two of the patients the improvement was not very striking; the hemoglobin in one case rose from 36 to 48 per cent. in twenty-eight days; during that time the patient received two transfusions; in the other case the hemoglobin and red blood cells were only very slightly increased at the end of thirty-six days; in the third case, on the other hand, there was a very marked improvement, the hemoglobin rising from 25 to 60 per cent. in thirty-two days and the red blood cells increasing correspondingly.

Mosenthal is convinced that the nitrogen in these cases is retained. The question as to what use the body makes of it is another matter. A control case of secondary anemia was treated in the same manner as the patients with pernicious anemia, with the exception that no hydrochloric acid was given. This patient received a higher caloric diet than the other patients. His desire for food was enormous and even with an intake of 68.9 calories per kilogram, he claimed that he could easily manage a little more. The nitrogen assimilation in this patient was decidedly higher than in those with pernicious anemia. This may have been accidental, but it suggests that the element of protein destruction does play a considerable rôle in pernicious anemia.

### California State Journal of Medicine, San Francisco

June, 1918, **16**, No. 6


35 Training of Nurses and Social Workers in Present Emergency. P. K. Brown, San Francisco.—p. 281.
36 *Interrelationship of Asthma and Tuberculosis. P. H. Pierson, San Francisco.—p. 284.
37 *Value of Renal Functional Studies in Prognosis and Treatment of Nephritis. S. H. Hurwitz, San Francisco.—p. 287.
38 Schistosomiasis in California. A. C. Reed, San Francisco.—p. 293.
39 Venereal Disease Control in California. H. G. Irvine and E. M. Watters, San Francisco.—p. 296.
40 Laboratory Technic Carried Out in Studies of Lobar Pneumonia in Base Hospital. K. J. Staniford.—p. 300.
41 Cerebral Edema in Intracranial Trauma. A. S. Lobingier, Los Angeles.—p. 303.
42 Sarcoma of Choroid; Report of Two Cases. B. F. Church, Redlands.—p. 305.
43 *Passage of Drugs from Blood Serum to Spinal Fluid. H. G. Mehrtens, San Francisco.—p. 306.


36. **Interrelationship of Asthma and Tuberculosis.**—Pierson emphasizes the fact that asthma is not always a diffuse process but often limited to a small area in one lung. Although the signs may be localized the symptoms may be localized or general. Whether primarily or secondarily infected the first evidence of pulmonary tuberculosis is an enlargement of the bronchial glands. Their enlargement is a part of the normal mechanism for the battle against the disease. It is through their functioning that antibodies are manufactured. When the person is enjoying good health the glands are not interpreted as a tubercular focus; it is only when the person is below normal that they are considered as of potential or possibly actual danger. In this latter type of a person the glands are swollen and more actively diseased. Their presence irritates the adjoining bronchi, setting up a low grade inflammation which may become the seat of secondary infection. These factors may start the vicious circle for an asthmatic condition. This condition may occur during childhood or later life and may irritate one bronchus and hence one lobe, or one lung or both lungs. This is a very important factor in properly interpreting localized asthmatic breathing. From the glandular condition slowly or rapidly develops a peribronchial fibrous thickening extending outward toward the periphery. This may involve one lobe much more than another. All this time the person is manufacturing antibodies, and if these are sufficient the disease remains confined and not actually dangerous. If the scale turns against the person in this struggle, there may occur a breaking down of the glandular or lymphatic elements at the hilus or nearer the periphery and a focus start in the lung tissue. Again depending on the location and also on the extent of the process, one or more lobes may be involved by an irritating process in a bronchiole and a factor established for a possible localized asthma. The tuberculous disease may not break down so as to invade the smaller alveoli but it may cause a chronic inflammatory process in the bronchioles on which is developed a secondary infection. The possible tuberculous etiology for this secondary infection must not be overlooked in such instances. From this survey and working on the "nonpassive expiratory theory," Pierson explains clinically and pathologically that localized foci of tuberculosis may, and from experience do, actually set up a localized or general asthma.

37. **Value of Renal Functional Studies in Treatment of Nephritis.**—Hurwitz urges that studies of the permeability of the kidneys for fluids, salt, and nitrogen are of great assistance in the laboratory control of nephritis. They aid in visualizing the actual daily response of the kidney to the therapeutic measures and they serve as a guide in the management not only of the disease, but of the individual patient.

43. **Passage of Drugs from Blood Serum to Spinal Fluid.**—The introduction of the patient's own serum into the subarachnoid space produces an irritation manifested by a pleocytosis frequently as high as 1,800 cells per cm. Even drainage of 30 to 50 c.c. of spinal fluid may be followed by a mild reaction of 10 to 80 cells. Mehrtens thought it possible that this irritation of the choroid would enable drugs and antibodies to pass into the spinal fluid for a period of thirty-six hours. In order to secure exact information on this point, he attempted to bring sodium iodid from blood to spinal fluid. The technic consisted in injecting 50 grains of sodium iodid in a 10 per cent. solution intravenously every half hour for four injections. One hour after the last injection, 12 c.c. of spinal fluid was removed, a cytologic examination was made and the fluid was examined for iodin. In ten control cases no iodid was found. In the next group of cases (eight) the same routine was followed except that 10 c.c. of horse serum was injected into the subarachnoid space six hours before the intravenous injections of iodid. The resulting spinal fluids in six cases showed intense irritation in some cases up to 16,000 cells per c.mm.—in two cases practically no reaction was obtained. Those cases showing the intense reaction gave definite tests for iodin in the spinal fluid. The two cases showing little or no reaction gave negative tests for iodin. These results would seem to point to the irritation of the meninges as the essential feature in producing the permeability for iodid.

### Canadian Medical Association Journal, Toronto

June, 1918, **8**, No. 6


44 Medicine and Democracy. J. P. Morton, Hamilton, Ont.—p. 481.
45 *Determination of Basal Metabolism by Indirect Calorimetry; Case of Polycythemia with Splenomegaly. M. E. Abbott, Montreal.—p. 491.
46 Protein Milk in Treatment of Digestive Disturbances. A. Brown, H. Spohn and I. F. MacLachlan, Toronto.—p. 510.
47 Malaria in the Army. E. J. Williams.—p. 523.
48 Abscess of Lung. W. A. Wilkins, Montreal.—p. 530.
49 Two Cases of Dermoid Tumors Complicating Pregnancy. J. N. Hutchison, Winnipeg.—p. 535.
50 Canadian National Committee for Mental Hygiene. E. M. Russel.—p. 538.


45. **Determination of Basal Metabolism by Indirect Calorimetry.**—In the cases cited by the authors the basal metabolism was determined on two occasions, at an interval of five months. The average of the results showed a heat product of 40.9 calories per square meter of his body surface per hour, that is a rise above the normal standard, for persons of his sex and age, of 16 per cent. The second determination was made two days before discharge from the hospital, 45.3 calories per square meter were produced giving a raised basal metabolism of 28.7 per cent. This moderate rise of metabolism compares with cases of pernicious anemia studied by others in which a similiar rise was noted, in

view of the red cell regeneration that frequently exists in both diseases. The author claims that this is the first observation of the kind ever made.

### Florida Medical Association Journal, Jacksonville

April, 1918, **4**, No. 10

51 Practical Eugenics. J. J. Kindred, New York.—p. 287.
52 Open-Air Life. J. M. Masters, Port Orange.—p. 291.
53 Diagnosis and Treatment of Myocarditis. R. R. Niblack, New Smyrna.—p. 292.
54 Relation of Pancreas to Diabetes. H. S. Munson, DeLand.—p. 293.
55 Diabetic Gangrene. D. T. Smith, Daytona.—p. 295.
56 Treatment of Tuberculosis of Skin. M. P. Guy, Daytona Beach.—p. 296.
57 Feeding of Tubercular Patient. C. C. Bohannon, Daytona.—p. 296.
58 Diet in Chronic Bright's Disease. V. Z. Baerecke, Deland.—p. 297.

### Indiana State Medical Association Journal, Fort Wayne

June, 1918, **11**, No. 6

59 The New Way. F. H. Martin, Chicago.—p. 223.
60 Repair of Birth Injuries. F. R. Clapp, South Bend.—p. 229.
61 Restoration of Part or All of Lower Jaw. H. R. Allen, Indianapolis.—p. 230.
62 Advantages and Disadvantages of Joining Medical Reserve Corps. F. W. Foxworthy, Indianapolis.—p. 231.
63 Physician's Whole Duty. A. G. W. Childs, Madison.—p. 235.
64 Phthisiogenesis and Its Relation to Classification of Pulmonary Tuberculosis. W. A. Gekler, Terre Haute.—p. 238.

### Journal of Medical Research, Boston

May, 1918, **38**, No. 2

65 *Anatomic Study of Senescence in Dogs; Relation of Cellular Changes of Age to Tumors. E. W. Goodpasture, Boston.—p. 127.
66 Immunity and Tissue Transplantation. Reactions Occurring About Tissue Transplanted Into Homologous Animals. M. S. Fleisher, St. Louis.—p. 191.
67 *Mitochondria of Tumors. E. W. Goodpasture, Boston.—p. 213.
68 Pathology of Spavin. S. A. Goldberg, New York.—p. 225.
69 Monostome of Genus Collyriclum Occurring in European Sparrow; Development of Ovum. E. E. Tyzzer.—p. 267.

65. **Relation of Cell Changes to Tumor.**—The material for this study consisted of the postmortem findings in fifty old dogs. Goodpasture was able to demonstrate general and widespread degenerative cellular changes and an associated simplification of structure, together with an acquisition of growth power accompanying the progress of age. Following in the wake of these regressive alterations are cellular redifferentiation, metaplasia, multiple benign and malignant tumors. These phenomena are consecutive and interrelated. Goodpasture has been led by his observations and by certain biologic facts to the following interpretation: Progressive cellular differentiation eventually leads to senescence by the constant accumulation in the protoplasm of more or less stable structural substances. A disturbance of assimilation or of metabolism of cells in time results, maybe, with the accumulation of injurious metabolic substances within either cytoplasm or nucleus. Many cells die, while others lose their specialization, and in so doing they recover to a greater or lesser degree their vitality and youth. These dedifferentiated cells possess potentialities for growth and differentiation in varying degrees. By the process of dedifferentiation cells may lose not only their specialization, but also the power of again becoming perfectly adapted to the needs of the organism. The simplest form of dedifferentiation may result in the regeneration of cells, which become easily adapted to specialized function. Further dedifferentiation gives rise to cells which when regenerated are capable of only partial resumption of function, while a greater degree of this change may entirely destroy the capacity of the cell to resume special function and structure, but leaves formative power dominant in its life. The continued growth of these cells results in tumors which are malignant. The malignant as well as the benign tumors of old dogs are usually multiple. Senescence in dogs is accompanied by multiple degenerative changes in many organs and tissues, and associated with these changes are multiple benign and malignant tumors, which seem to result directly from these degenerative changes. With age there is progressive differentiation which eventually injures the cells of the body. Many of these cells die, others become dedifferentiated in varying degrees. These dedifferentiated cells possess the power to grow, but their capacity to function may be diminished or lost. From these dedifferentiated cells metaplasia and benign and malignant tumors arise.

67. **Mitochondria of Tumors.**—The number and, to a certain extent, the character of mitochondria of tumors may vary somewhat from the normal tissue in which they arise, but the difference is not sufficient to warrant a distinction between malignant and benign cells, nor is the difference in staining constant or uniform. Conclusions concerning the specific functional activity of cells, especially those of tumors, based on such evidence as an increased amount or difference in character of mitochondrial substance do not seem to Goodpasture to be justifiable. Mitochondria may be present in great numbers in cells which obviously are not concerned with specific function, that is, those undergoing mitosis, and in undifferentiated malignant tumors. Mitochondria are composed of material which is utilized by the cell in its general metabolic processes, and in this way may be indirectly involved in the formation of secretion and other specific structures.

### Journal of Pharmacology and Experimental Therapeutics, Baltimore

May, 1918, **11**, No. 4

70 *Effect of Intravenous Injections of Some Sodium Salts; Supposed Toxicity of Sodium Phosphate. I. Greenwald, New York.—p. 281.
71 *Pharmacology and Toxicology of Copper Salts and of Amino Acids. H. L. Huber.—p. 303.
72 Treatment of Amebic Dysentery with Chaparro Amargosa (Castela Nicholsoni of Family Simarubaceae). A. W. Sellards and M. A. McIver, Boston.—p. 331.

70. **Intravenous Injections of Some Sodium Salts.**—Greenwald states that the symptoms observed after intravenous administration of neutral solutions of the sodium salts employed (chlorid, sulphate and phosphate) depend on: (1) Changes in the volume of the circulating fluid. (2) Changes in the osmotic pressure. (3) Change in reaction, due to selective retention of the cation. (4) Disturbance of the relation between sodium and potassium, calcium and possibly other ions in the blood and other tissues. (5) The nature of the anion, but probably only through its effect in determining the permeability of the cells to the sodium. There is no evidence of a direct, toxic action of the phosphate ion.

71. **Copper Salts of Amino Acids.**—Huber's experimental work seems to show that the three copper amino acids examined (leucinate, glycinate and glutaminate) produce exactly the same physiologic effects as a simple inorganic salt, copper sulphate.

### Medical Record, New York

June 22, 1918, **93**, No. 25

73 Facts and Fancies About Tonsils. H. L. Swain, New Haven, Conn.—p. 1069.
74 Select Medication in Children. H. B. Sheffield, New York.—p. 1078.
75 Enteroptosis or Exoptosis? A. L. Benedict, Buffalo.—p. 1083.
76 Custodial Care of Addicts. E. C. Chamberlain, New York.—p. 1085.
77 The Structural and Relational Variations in Uterine Peritoneum. H. Crutcher, Tularosa, N. M.—p. 1086.
78 Cooperation Between Life Insurance Companies and Practicing Physician. T. W. Edgar, New York.—p. 1087.

### Military Surgeon, Washington, D. C.

June, 1918, **42**, No. 6

79 *Treatment of Tuberculosis. G. E. Bushnell.—p. 625.
80 Combat against Dsease Durng War. C. U. Dercle.—p. 642.
81 *Causes and Prevention of Primary Pneumonias and Pneumonias Complicating Measles in U. S. Army. W. A. Pratt.—p. 653.
82 *Gunshot Fractures of Long Bones of Extremities. H. Frost—p. 659.
83 Report of Physical Examination of Twenty Thousand Volunteers. C. L. Cole, E. W. Loomis and E. A. Campbell.—p. 675.

79. **Treatment of Tuberculosis.**—Speaking of tuberculin, Bushnell says, that he has too often seen very serious harm from tuberculin, as employed by others, to be enthusiastic concerning its use. Tuberculin is most helpful to those who need help least. Advanced cases of tuberculosis are very

seriously injured by it, but the rather numerous class of sanatorium patients who have little or no active tuberculosis, their disease being of a chronic, though often diagnosticated as acute type, are able to tolerate it, sometimes apparently to their advantage. Those physicians whose practice is mostly confined to cases of well marked, manifest pulmonary tuberculosis are rarely enthusiastic advocates of its use. An accurate diagnosis is indispensable. Tuberculin in the hands of the ignorant is a terribly deadly weapon. Bushnell believes that cases of genuinely active tuberculosis are more often harmed than benefited by it, and is of the opinion that better results in the long run for the average patient are attained by the psychical treatment. He is therefore opposed to its use in army hospitals.

81. **Causes and Prevention of Primary Pneumonia.**—In dry climates sudden changes in humidity are not encountered as a rule and people living there are acclimated, nevertheless they are affected by any sudden change in humidity. Pratt says that observations go to show that exposure to cold temperatures does not predispose one to pneumonia unless through excessive loss of body heat when resistance is lowered. Cold air is not necessarily pure air, yet in well ventilated, cool rooms the blood is better able to take up available oxygen. In view of this fact should we not surround all blood infections with these conditions, especially measles? The whole blood stream can become toxic in a remarkably short time, even in an hour. Many of these toxic elements are not eliminated as quickly as they are taken up by the blood. Carbon monoxid, although it is rarely present in the conditions under consideration, yet carbon, hydrogen and sulphur combinations may exist in gaseous states which unite with hemoglobin as readily as the monoxid of carbon.

In barracks at bed time, while healthy, active men are undressing after a day of marching or drilling, odors from their bodies abound, and we must not neglect to mention those nauseating emanations from the feet. Under these conditions, with slight disorders in the upper air passages, the often freshly cultured pathogenic germs enter and gain such a profound hold that all therapy seems hopeless. Pratt has observed the complexion of men living under conditions cited above, at reveille; invariably they are pale, almost to a man. After an hour or two of drilling the color comes back and is generally good toward evening. The night indoors follows, with results that should not happen. Whether troops are sleeping in barracks, cantonments, or tents, rules requiring open windows, or tent flaps, will only be disregarded unless we first of all make sure the bedding is adequate. Pratt points out that along with other rational measures the drafting at once of systematic sanitary regulations for troop trains seems imperative. The adoption of some, if not all, of these preventive measures would seem feasible, practical and not costly.

82. **Gunshot Fractures of Long Bones of Extremities.**—Frost relates some of his experiences in a base hospital in England. Among 4,000 cases there have been 550 fractures, of which 287, or 52.18 per cent., have involved the long bones of the extremities. About 13 per cent. of these have been simple fractures. The missiles causing the fractures (195) have been proportioned as follows: bullet, 49.8 per cent.; shell, 34.3 per cent.; shrapnel, 9.7 per cent.; grenade, 2 per cent.; undetermined, 4.1 per cent. Flesh wounds have been of this order: perforating, 59.6 per cent.; nonperforating, including gutter wounds, 40.3 per cent.; of the perforating wounds, 14.2 per cent. have had explosive exits. The majority of perforating and explosive wounds were caused by bullets; of nonperforating wounds, by shell fragments. Of 195 cases, 76.9 per cent. have been infected; and 23.1 per cent. noninfected.

In the infected cases, bullet and shell have been in about equal proportion; in the noninfected cases, the bullet has been the chief agent. The average period required for union of infected fractures has been seventy days while of noninfected fractures it has been fifty days. Likewise, the average time of treatment of this hospital has been: infected, 137 days; noninfected, seventy-four days. Infected fractures attain poorer ultimate function than the noninfected. Complications have occurred as follows: nonunion, 6.1 per cent.; nerve injuries, 7.1 per cent.; secondary hemorrhage, 0.5 per cent.; ankylosis, 18.9 per cent.; muscle and tendon adhesions, 3.0 per cent.

Of 195 fractures, about 5.6 per cent. have required amputation. The majority of these had been amputated in France, about 55.5 per cent. of them required reamputation after admission. This is accounted for by the prevalence of flush amputations. The fracture cases (195) have been disposed of as follows: invalided, 43.6 per cent.; transferred to orthopedic hospitals, 15.7 per cent.; to convalescent homes, 30.9 per cent.; to duty, 9.6 per cent. There has been only one death in 287 long bone fractures; in a case involving the head of the tibia and knee joint, with resulting septicemia.

### Missouri State Medical Association Journal, St. Louis

June, 1918, **15**, No. 6

84 Traumatic Rupture of Kidney. M. Goldman, Kansas City.—p. 197.
85 *Mucosa of Rectum and Sigmoid Colon as Focus of Infection. H. W. Soper, St. Louis.—p. 200.
86 General Medical Aspect of Focal Infections Including Those of Gallbladder and Appendix. L. H. Hempelmann, St. Louis.—p. 205.
87 Focal Infections of Genito-Urinary Organs. H. G. Greditzer, St. Louis.—p. 203.
88 Focal Infections of Female Genitalia. F. J. Taussig, St. Louis.—p. 205.
89 Poison of Evolution. G. F. Wright, Oberlin, Ohio.—p. 207.
90 Pseudonymous Science and Philosophy of Deceit. E. W. Saunders, St. Louis.—p. 207.
91 Physiology and Pathology of Mediastinum. G. Richter, St. Louis.—p. 211.

85. **Mucosa of Rectum and Sigmoid Colon as Focus of Infection.**—Soper has found that the lower colon is frequently invaded by pus-forming organisms. The infection is mixed in character and exhibits an extreme degree of chronicity. The resulting systemic disease varies from merely nervous disturbances, headaches, and constipation to pus infection of the appendix and gallbladder, gastric ulcer, arthritis deformans and chronic kidney disease. Soper says that treatment by dry powder insufflation method of Rosenberg is extremely efficacious. Calomel is the powder of choice for local use, as it adheres well to the mucosa and cannot be easily dislodged. It is nonirritant and may be applied to the sensitive mucosa of the anal canal without producing pain. There is no danger from absorption. Not a single case of systemic disturbance followed the daily use of large quantities. Finally, calomel had probably more antiseptic power than any other available powder. In the search for foci of infection, the lower bowel must not be neglected. In fact, no general examination of a patient is complete without proctosigmoidoscopy.

### Modern Hospital, St. Louis

June, 1918, **10**, No. 6

92 Nursing Crisis. S. S. Goldwater, New York.—p. 389.
93 Nonrestraint System in Insane Wards of Nagasaki Hospital. N. Ishida, Nagasaki, Japan.—p. 393.
94 Standards of Hospital Education for Interns. J. M. Baldy, Philadelphia.—p. 397.
95 Nurses' Homes—Plea for Efficiency in Their Design. M. J. Sturm, Chicago.—p. 403.
96 Installation of Modern Roentgen Equipment at Moderate Expense. V. M. Moore, Grand Rapids, Mich.—p. 409.
97 Open Cottages at Kankakee State Hospital. E. Cohn, Kankakee, Ill.—p. 411.
98 New Maternity Building for West Philadelphia. L. W. Burrows, Philadelphia.—p. 413.
99 Little Journeys to Places and People Worth Knowing. M. J. Robinson.—p. 417.

### Nebraska State Medical Journal, Norfolk

June, 1918, **3**, No. 6

100 Nephritis. A. Sachs, Omaha.—p. 169.
101 Nebraska State Department of Health. W. F. Wild.—p. 173.
102 Rectal Examinations in Obstetrics. P. Findley, Omaha.—p. 175.
103 Treatment of Eclampsia. J. C. Edgar.—p. 177.

### Northwest Medicine, Seattle

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104 Surgery of Prostatic Urethra and Bladder Neck. G. McGowan, Los Angeles.—p. 159.
105 Fractures from Viewpoint of General Practitioner. R. H. Fisher, Rigby, Idaho.—p. 166.
106 Case of Uterus Bicornis Duplex. S. F. Wiltsie, Seattle.—p. 169.

107 Operative Indications for Deflection of Nasal Septum. O. M. Rott, Spokane.—p. 171.
108 Hemostasis in Tonsillar Surgery. E. F. Chase, Seattle.—p. 173.
109 Skin Changes in Lymphatic Leukemia. W. Brown, Tacoma. —p. 175.
110 Nocturnal Emissions and Continency. B. S. Peterkin, Seattle.—p. 178.

### Surgery, Gynecology and Obstetrics, Chicago

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111 Military Aspects of Surgery of Spine and Spinal Cord. C. H. Frazier, Philadelphia.—p. 589.
112 Old Injuries of Spinal Cord. A. B. Kanavel, Chicago.—p. 601.
113 *Changes in Trigon Due to Tuberculosis of Kidney, Ureter and Bladder. H. H. Young, Baltimore.—p. 608.
114 *Effect of Dichloramin-T Chlorinated Eucalyptol Solution on Peritoneum. S. P. Reimann and J. A. H. Magoun, Philadelphia. —p. 616.
115 Therapeutic Use of Radium in Gynecology. J. G. Clark, Philadelphia.—p. 619.
116 Radium in Uterine Cancer. H. C. Bailey, New York.—p. 625.
117 Study of Kidney and Ureteral Stones with Cystoscopic Method for Their Removal. V. D. Lespinasse, Chicago.—p. 631.
118 *Gunshot Injuries of Lungs; Report of Thirty Cases. C. Eggers. —p. 638.
119 *Is Purgation of Patients Before Operation Justifiable? W. C. Alvarez, San Francisco.—p. 651.
120 Ligation of Splenic Artery for Banti's Disease; Report of Case. A. W. Blain, Detroit.—p. 660.
121 Retroperitoneal Cysts of Wolffian Origin; Report of Case. J. M. Maury, Memphis, Tenn.—p. 663.
122 *Puerperal Septic Uteropelvic Thrombophlebitis; Report of Case. A. Turenne, Montevideo, Uruguay.—p. 668.
123 Exstrophy of Bladder; Report of Case. C. C. Coleman, Richmond, Va., and R. J. Wilkinson, Huntington, W. Va.—p. 678.
124 Transperitoneal Nephrectomy in Infants for Large Congenital Hydronephrosis. M. S. Kakels, New York.—p. 681.
125 New Fracture Orthopedic Operating Table. F. H. Albee, New York.—p. 683.
126 *Rubber Tube Reconstruction of Common Bile Duct. F. Hagler, St. Louis.—p. 689.

113. **Changes in Trigon Due to Tuberculosis.**—Cases are cited by Young to demonstrate that tuberculosis of the kidney may lead to great shortening of the ureter, resulting in traction on and marked elevation of the trigon, and invagination of the ureteral ridge into the ureter; that tuberculous ulceration may then produce an undermining of this elevated trigon and finally complete separation of trigon from the bladder beneath, except at the three corners (where the trigon is continuous with the ureteral muscle above and the urethral muscle below); that, after nephrectomy, healing of the vesical tuberculosis may leave this "trigonal bridge" with new mucous membrane beneath it except at the three corners where the "bridge" is attached and gets its blood supply.

114. **Effect of Dichloramin-T on Peritoneum.**—On the surgical service of the Lankenau Hospital, observations have led to the conclusion that very definite harm can be done by this method of treatment, and that, contrary to published opinions, skin irritation takes place, despite careful adherence to the principles of fresh undecomposed solutions, minimum dressings, avoidance of alcohol, water, and other substances likely to decompose the solution. Blood and exudate form a solid coagulum in the meshes of the gauze and interfere with drainage. The effect of solutions of 7.5 per cent. and 20 per cent. dichloramin-T chlorinated eucalyptol on the healthy peritoneum of dogs was investigated. The same strength solutions were used on infected peritoneum to determine if infection would be inhibited or destroyed. Observations from the surgical service on the effect of the 20 per cent. oil in the treatment of abscess cavities in the peritoneum shows that the solution causes clotting of blood and exudate on gauze, and drains, and leads to interference with drainage and trauma. In the peritoneum of dogs, it causes a violent irritation with a hemorrhagico fibrinous exudation. The same results in the peritoneum of dogs are produced by the 7.5 per cent. in a certain percentage of cases. Both the 7.5 per cent. and the 20 per cent. solutions are distinctly harmful to the peritoneum; the benefits are none.

118. **Gunshot Injuries of Lungs.**—Eggers' experience leads him to urge that perforating gunshot wounds of the thorax and lungs with a closed pneumothorax or without one, should be treated conservatively. Hemothorax producing alarming symptoms of compression should be aspirated early, removing just enough fluid at first to relieve the symptoms. Hemothorax running a normal course but showing no or little tendency to absorption, should be aspirated to prevent the formation of a thickened pleura, contraction of the lung, etc. An infected hemothorax should either be aspirated at first and later have a rib resection, or, if the symptoms are urgent, the rib resection should be done at once. An open pneumothorax with a small external opening should be closed by suture if the wound is clean, otherwise by a firm dressing or a tampon. An open pneumothorax with a large opening should promptly be treated surgically. If only the thoracic wall is injured, the wound edges should be excised, and the lung sutured into this window. In case the lung also has been perforated, this wound should likewise be excised and sutured and this portion of the lung then fastened into the thoracic window. In order to do these operations satisfactorily it is advisable to have a simple positive pressure apparatus at hand.

119. **Is Purgation Justifiable?**—Experimental observations made on animals have convinced Alvarez that purgatives should not be given before operations because some of the purgatives owe their effects to the fact that they are irritant poisons that must be removed quickly from the body. Others act by interfering with intestinal absorption and by upsetting the balance of salts. In either case they bring about pathologic conditions. The body is weakened and not strengthened. The dehydration of the body and the upset in salt balance are bad, particulary before an operation in which there may be hemorrhage and vomiting. With magnesium sulphate, there may be an increased amount of fluid in the bowel to disturb those who want it empty. In operations on the colon, liquid contents are harder to control mechanically than are solid masses. There is an increased growth of bacteria. There is some evidence that there is an increased absorption of toxins, and a greater permeability of the mucous membrane to bacteria. Undigested food may be carried down into the colon to supply increased pabulum for the bacteria. By weakening some parts of the bowel and making others more irritable, the even flow of material from stomach to anus is rendered impossible. Whether from disturbances in motility, in absorption, in the circulation, or in the bacterial conditions, there certainly is a tendency to flatulence and distention.

When the bowels must move frequently during the night, the loss of sleep is considerable. The purgation is particularly trying if the patient is wearing a large cast, has a broken leg, or other painful lesion which makes each resort to the bedpan an ordeal. If the patient should happen to have some intestinal obstruction, a gangrenous appendix, a badly diseased Meckel's diverticulum, or adhesions forming around some pus, purgation may directly cause death. Purgation makes the bowel react so poorly to drugs that there may be grave difficulties in meeting postoperative emergencies. Emptying the bowel by starvation and purging makes the resumption of colonic activity much more difficult. The colon must be filled and distended to a certain extent before it will empty.

The fact that children and nervous women will sometimes begin vomiting during the night, before the operation, Alvarez thinks, shows that the purge must be responsible for some of the postoperative nausea and vomiting. The ether adds the finishing touches to what was begun the night before. It is suggested that food be given as late as possible before operation; that even enemas be avoided if not absolutely necessary; that water and solid food be given by mouth as soon after operation as possible; and that purgatives be avoided after operation as well as before.

122. **Puerperal Septic Uteropelvic Thrombophlebitis.**—Thrombophlebitis has signs, symptoms, and a clinical evolution which, according to Turenne, permit a diagnosis to be made in the majority of cases. Although in more than half the cases there is a tendency toward subsidence and recovery, the high mortality justifies modern methods of treatment. Surgical intervention, especially ligature of the thrombosed veins, is rational. The transperitoneal route is the preferable one. Ligation of all the efferent venous trunks of the genital zone is desirable. Resection or evacuation of the

thrombus should be resorted to only exceptionally. The results obtained from direct intervention on the thrombosed veins should encourage new attempts at operations to fix definitely the field of operation. Operations on the veins is contraindicated in cases of permanent bacteremia, in accessible thromboses, and in cases of visceral pyemic localizations.

126. **Reconstruction of Common Bile Duct.**—Hagler reports a case of operation for acute gallbladder disease; no stones were found, but a markedly diseased gallbladder which had drained spontaneously into the duodenum. Cholecystectomy was performed, during which the common duct was accidentally injured and the duodenum necessarily opened. The duodenum was repaired, a gastro-enterostomy made, and the common duct drained. A duodenal fistula developed on the fourth day and healed spontaneously five days later. A complete biliary fistula persisted after the primary operation, and at the secondary operation this was found to result from a defective bile duct. The loss of a portion of bile duct was produced by necrosis in all probability occasioned by infection and the digestive action of duodenal contents. A Sullivan's reconstruction was successfully performed with excellent immediate results. Death occurred over seven months after the reconstructive operation, being caused by multiple liver abscesses, secondary to ascending infection of the bile passages. Secondary stricture of the ducts did not occur. Hagler says that in certain cases of bile duct reconstruction necessity may compel the employment of Sullivan's operation, which, while not a method of choice, may prove to be of great worth. Two dangers militate against a permanent satisfactory result: (*a*) stenosis of the new formed duct by cicatrization; (*b*) stone formation and ascending infection of bile passages. Danger of cicatricial stenosis may be minimized by keeping the tube in the newly formed duct sufficiently long to allow complete epithelialization and thorough establishment of the newly formed duct. This period depends on the extent of the gap to be bridged. Calculus formation and infection of the biliary passages may be in a measure guarded by: (*a*) Avoiding nonabsorbable suture. (*b*) Not allowing the tube to remain permanently. If the tube does not pass at the proper period it should be removed by operation. Both spontaneous passage and operative removal may be facilitated by allowing the tube to project a few inches into the duodenum. A T tube which can be removed at will without operation may be superior to the tube as employed by Hagler. (*c*) Formation, if possible, of a valvular opening into the duodenum. Gastro-enterostomy is advised as a rational procedure in cases in which fears are entertained for the security of a duodenal repair.

### Tennessee State Medical Association Journal, Nashville

June, 1918, **11**, No. 2

127 Swinging of Pendulum. R. McKinney, Memphis.—p. 49.
128 Medical Profession and Part It Plays in War. V. C. Vaughan, Washington, D. C.—p. 53.
129 Sanitary Conditions in Camps and Cantonments. V. C. Vaughan, Washington, D. C.—p. 56.
130 Medical Reserve Corps and Medical Military Activities. F. F. Simpson, Washington, D. C.—p. 59.
131 Surgery on Battlefield. W. J. Bell.—p. 61.
132 Neurologic Surgery; Diagnosis and Treatment of Brain Injuries. W. Sharpe, New York.—p. 67.

### West Virginia Medical Journal, Huntington

June, 1918, **12**, No. 12

133 Necrology. C. H. Maxwell, Morgantown.—p. 441.
134 Elkins Situation During Past Three Months. A. M. Fredlock, Elkins.—p. 453.
135 The Eye. G. M. Burton, Weston.—p. 455.
136 Difficulties in Diagnosing Accessory Sinus Inflammations. G. A. Hinnen, Cincinnati.—p. 465.

### Wisconsin Medical Journal, Milwaukee

June, 1918, **17**, No. 1

137 Treatment of Senile Cataract. H. Gifford, Omaha.—p. 1.
138 Advantages and Disadvantages in Use of Metallic Bone Plates for Fracture. K. Doege, Marshfield.—p. 10.
139 Bone Grafting in Treatment of Fractures. F. J. Gaensler, Milwaukee.—p. 15.
140 Roentgen Ray as Aid in Reduction and Treatment of Fractures. J. A. Jackson, Jr., Madison.—p. 19.

## FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

June 1, 1918, **1**, No. 2996

1 Care of the Tuberculous Soldier. P. H. S. Hartley.—p. 609.
2 Roentgenographic Pelvimetry. W. R. MacKenzie.—p. 612.
3 *Part Played by Concomitant Infection with Anaerobic Organisms (Other than B. Tetani) in the Causation of Tetanus. W. J. Tulloch.—p. 614.
4 Aneurysm of Third Part of Left Subclavian Artery Treated by Ligature of Second Part. H. H. Brown.—p. 617.

3. **Concomitant Anaerobic Infections in Tetanus.**—Tulloch claims that there is good ground for believing that the ancillary part played by *B. welchii* in the causation of tetanus is clearly defined. The capacity of this organism for doing harm can almost be eliminated by the use of *B. welchii* antitoxin. The *Vibrion septique* may also play a part in the production of tetanus. Therefore, antibodies to the toxins of *B. tetanus, B. welchii* and *Vibrion septique* should be included in all serums employed for the prophylaxis of tetanus. Tulloch does not believe that such a serum would absolutely eliminate tetanus because other organisms, doubtless, may play a part in the causation of tetanus, especially *B. edematiens.*

### Indian Medical Gazette, Calcutta

April, 1918, **53**, No. 4

5 *Autogenous Oral Streptococcal Vaccines in Treatment of Seventeen Cases of Sprue. L. Rogers.—p. 121.
6 Present Position of Treatment of Syphilis. H. S. Matson.—p. 126.
7 Prevention of Malaria in Cantonments. P. Hehir.—p. 130.
8 Prevention and Treatment of Malaria. T. S. Ross.—p. 134.
9 How to Examine Recruits. J. F. James.—p. 136.
10 Laying Out of Large Military Camp. C. C. Murison.—p. 138.
11 Treatment of Carbuncles and Boils. K. J. Dikshit.—p. 139.
12 Injection of Lymph as Protector Against Smallpox. C. F. Fearnside and S. G. Poi.—p. 140.

5. **Results of Vaccine Treatment of Sprue.**—Seventeen consecutive cases have been treated by Rogers during the last four years. Five more patients with sprue and spruelike diarrhea have been treated in a similar way with autogenous oral streptococcal vaccine, and in each case there was satisfactory improvement. In the great majority of the cases, cultures were made when the tongue or mouth presented soreness or even small ulcers, but success was sometimes obtained during quiescence of the oral symptoms. Glycerin-agar was always used and commonly a nearly pure culture of streptococci was obtained, while they were nearly always the predominating organisms. When uniform surface subcultures had been obtained on sloped glycerin-agar tubes, 5 c.c. of sterile normal saline is added to each tube and heated to 56 C. for one hour, and 0.5 per cent. phenol added. After mixing by separating the colonies with a sterile platinum loop it is put up in from 0.5 to 2 c.c. doses, the approximate count being about 100 million per cubic centimeter; a 0.5 c.c. dose was always a safe one to begin with. If the reaction was slight or absent, as was almost always the case, 1 c.c. was given after five days and repeated weekly until there was little or no reaction, and when it was increased to 1.5 c.c., and eventually, if necessary, to 2 c.c., ten days' interval being allowed between the last mentioned doses. The injections are nearly painless and usually have to be continued for from three to six months in typical cases, and occasionally for longer with intervals of omissions. The only drug Rogers used to any material extent in the present series of cases is bismuth salicylate in 15 to 20-grain doses, three times a day at first, but gradually reduced to once a day when the stools fall to one or two daily. In a few of the worst cases a milk diet was given at first, but under the vaccine treatment Rogers found it possible to increase the diet more rapidly than can usually be done under other methods. Forty per cent. of the patients were cured; 40 per cent. were greatly improved; 18 per cent. were improved. Only one patient was not improved.

### Lancet, London

May 25, 1918, **1**, No. 4943

13 Teaching and Training in Hygiene: III. Training of Nonmedical Public Health Workers. H. R. Kenwood.—p. 727.
14 *Technic of Infected Wound Closure. F. B. Gurd.—p. 731.

15 Two Fatal Cases of Estivo-Autumnal Malarial Fever Occurring in England. A. J. Hall, E. H. Williams and J. S. C. Douglas.—p. 734.
16 *Method for Drainage of Deep Wounds of Thigh. W. S. Handley and P. J. Hanlon.—p. 735.
17 Skin Grafting in Treatment of War Burns. C. P. G. Wakeley.—p. 736.

June 1, 1918, 1, No. 4944

18 *Blood Transfusion in War Surgery. L. B. Robertson.—p. 759.
19 Acidosis of Shock and Suspended Circulation. A. E. Wright and L. Colebrook.—p. 763.
20 Pulmonary Fibrosis, Tuberculous and Nontuberculous. G. T. Hebert.—p. 765.
21 Intrapelvic Abscess, Complications of Gunshot Wounds of Buttock. W. Thorburn and G. Richardson.—p. 767.
22 Anaerobes in Soil Infected Wounds. H. Goodale.—p. 768.
23 Case of Amebic Abscess of Liver and Brain with No Previous History of Dysentery. T. D. M. Stout and D. E. Fenwick.—p. 769.

14. **Technic of Infected Wound Closure.**—Gurd believes that a more aggressive and direct method of treatment of infected compound fractures than is commonly employed in the home hospitals is indicated. The technic introduced by Rutherford Morison and Carrel, when properly employed, have each proved their usefulness in the hospitals in France. In a series of thirty characteristic cases the author has applied a modification and combination of these methods with gratifying results. The method has shown itself to be safe, not difficult to carry out, and has been followed by satisfactory results in a large proportion of cases. The treatment has consisted in excision and cleansing of original wound, if not already accomplished. Adequate incision of inflamed area is made, tubes are introduced, and discontinuous instillation according to method introduced by Carrel.

So soon as necrotic fascia, muscle tissues, etc., have separated or have been excised and profuse suppuration more or less controlled, the treatment is changed. The surface of the wound and the surrounding skin is thoroughly cleansed with soap and water and bathed with spirit. The wound is then dried, an excess of bismuth iodoform paste (Morison) is placed over the surface and into all pockets and bone cavities. Gauze gently wrung out of liquid petrolatum, and containing in its center a mass of bismuth iodoform petrolatum paste is placed everywhere in contact with the tissues. This is substantially the technic suggested by Morison with the addition of the paraffin gauze pack. This was commenced with the view of inducing the bismuth iodoform mixture to insinuate itself into all interstices of the wound, and appears to have proved its usefulness. Wounds so treated, even though they have been previously discharging freely, do not require dressing more often than once in five to fifteen days. Pain in injured limb and marked constitutional evidence of infection indicate necessity of further interference. Even though there be moderate staining through the dressings, the wound need not be disturbed, as the dressings do not tend to become foul, nor do proliferating granulations tend to invade, or become adherent to the paraffined gauze. In several cases it has been found useful in phlegmonous wounds receiving Carrel-Dakin instillations to protect portions of wound less severely infected by means of a bismuth iodoform petrolatum paste paraffin gauze pack.

The advantages claimed are: 1. Lessening of discomfort and pain to the patient as a result of increase in interval between dressings and shortening of open wound period. 2. Improvement in functional result in consequence of (*a*) less frequent disturbance of bone fragments during the dressing stage and the earlier application of complete immobilization in cases in which this is indicated. (*b*) A diminution in the number of adherent painful scars and nutritional disturbances. (*c*) Earlier opportunity for secondary operations, such as nerve and tendon suture and massage, etc. 3. Early transformation of patients from the dressing to observation class of men. 4. Shortening of hospital days per patient and consequent increase in the usefulness of hospital beds. 5. Economy of dressing material, both by reason of the infrequency of dressings and by shortening of the dressing period.

16. **Drainage of Wounds of Thigh.**—The drainage of a deeply infected thigh is a problem which has not yet received the attention due to its importance. Is it or is it not possible to arrest the spread of infection in the intermuscular planes by well devised incisions? The largest and most important intermuscular space, and the one most easily opened up, is the space between the vastus externus muscle and the crureus. This space runs the whole length of the thigh and communicates with many of the other intermuscular spaces. It occurred to the authors that if this space could be thoroughly opened up the problem of drainage of the deep thigh tissues would be largely solved. Anatomic conditions favor the drainage of this space by an incision which does not divide any important structure or subsequently impair in any way the functions of the thigh.

The posterior limit of the space in question corresponds to the external intermuscular septum and lies on the postero-external aspect of the thigh in a position ideal for drainage by gravity as the patient lies in bed. The incision is made along at least two thirds of the length of the thigh and divides the fascia lata immediately behind the septum. The tissues are opened up in the place between the external intermuscular septum and the hamstring muscles until the linea aspera is reached. The external intermuscular septum is now cut through along its line of attachment to the linea aspera and its prolongations above and below. Drainage tubes or Carrel's tubes are now inserted, but the wound itself gapes so considerably that it is probable in many cases they will prove unnecessary. Incidentally the incision abolishes the constricting action exerted on the deep tissues of the thigh by their tight sleeve of inextensile fascia. On anatomic grounds and on the facts of one case the authors suggest that in a series of grave penetrating wounds of the thigh where primary excision of the wound has failed and sepsis is threatened colleagues on the lines of communication should adopt the plan of complete separation of the vastus externus from its origin. It will then be seen whether the method is applicable only to wounds of the region of the vastus externus, and with what degree of success and whether it is also successful as applied to wounds of the adductor region.

18. **Blood Transfusion in War Surgery.**—Of the indirect methods of blood transfusion there are three in general use at present on the British front: (1) syringes and cannulas; (2) paraffined glass containers; (3) anticoagulants (citrate method). Robertson says that to estimate accurately the value of the procedure at the front several factors other than the purely clinical must be considered, notably the distance of the station from the firing line, and the difficulties and time of transport of the wounded to the station. The sixty-eight cases cited by the author comprised the following: Primary hemorrhage (fifty-seven cases): (*a*) life saving (evacuated to base hospital in good condition) thirty-six cases; (*b*) immediately beneficial but died from shock, eight cases; gas gangrene, five cases; capillary bronchitis, one case; pulmonary embolism, one case; (*c*) no benefit, four cases; (*d*) harmful (hemolysis), two cases. Secondary hemorrhage: Nine cases of this type received blood transfusion; six recovered. Of the three that died, one died, of hemolysis (following a second transfusion), one of gas gangrene three days after transfusion, and one of streptococcus septicemia one month after transfusion. The last two cases had derived immense benefit from the transfused blood before they succumbed to the infection. Severe carbon monoxid poisoning: The two cases in which transfusion was done were among a number of men buried in a dugout in which certain combustible material caught fire. Venesection, with the removal of 1,000 c.c. of blood in two stages, gave moderate relief, but their condition remained grave and they were still of a bluish-gray color. The blood was almost black and of a peculiar syrup consistency. Blood transfusion (1,000 c.c.) made no immediate improvement, but the following day improvement was evident and the cases progressed to recovery.

## Practitioner, London

June, 1918, **100**, No. 6

24 Scalp Flaps and Depilation in Plastic Surgery of Face. P. P. Cole.—p. 461.
25 *Method for Radical Cure of Inguinal Hernia (Darn and Stay-Lace Method). W. S. Handley.—p. 466.
26 Dreams. F. P. Weber.—p. 472.
27 Treatment and Degree of Curability of Neurasthenia Pura. S. H. Bennett.—p. 478.

28 Treatment of Fecal Fistula. J. Taylor.—p. 487.
29 Results of Mechanotherapeutics of Septic War Wounds. E. F. Cyriax.—p. 491.
30 Case of Ascaris Infection. G. Ward.—p. 503.
31 *Gunshot Wound of Abdominal Cavity Treated with Ichthyol and Glycerin. C. W. Duggan.—p. 505.

25. **Darn and Stay-Lace Method in Treatment of Hernia.**—After he has separated the sac from the cord and removed the former, Handley proceeds to the insertion of a slack "stay-lace" of stout silk, filling up the triangular interval, bounded above by the lower edge of the conjoined tendon, below by the edge of Poupart's ligament, and externally by the internal abdominal ring. The needle is entered through the edge of the conjoined tendon, immediately internal to the internal ring, then at a point vertically below it takes up Poupart's ligament from within the inguinal canal. It now returns and takes up the conjoined tendon, then Poupart's ligament at a succession of points approaching nearer and nearer to the pubic spine. Having come to this point it now retraces its steps, taking up each time either the conjoined tendon or Poupart's ligament at points intermediate to the stitches already inserted and successively nearer and nearer to the internal ring. Then the ends are knotted together. But it must be specially noted that the stitch is not pulled tight; it is left quite lax. Much care must be exercised during the tying of the knot to insure that the stitch does not run up taut during the process, and that on the other hand the knot is very securely tied. It will simplify this step if, during the tying of the knot, the assistant grasps the threads just behind the knot with two pairs of nonserrated forceps. Serrated forceps are apt to injure and weaken the silk where they grasp it. By the insertion of this slack "stay-lace," a sort of entanglement of silk is formed which prevents any descent of a future hernial sac.

The cord which has been dragged upward is replaced and the external oblique is sutured by a few interrupted silk sutures. The size of the external ring is reduced if necessary. Now comes the process of "darning" which aims at strengthening the external oblique. The surface of the external oblique aponeurosis is cleared down to Poupart's ligament, upward 2 inches beyond the cord, outward well beyond the internal ring. The cleared area is now darned exactly as if it was a weak spot in a stocking. The threads are inserted parallel to the intercolumnar fibers and at right angles to the main fibers of the external oblique aponeurosis, beginning at the upper and outer angle of the cleared area. When the darn is complete the ends of the stitch are simply cut off at points quarter inch from their points of emergence from the aponeurosis. There is no need to secure them in any way by a knot.

31. **Gunshot Wound of Abdominal Cavity Treated with Ichthyol and Glycerin.**—Duggan points out that the efficient treatment of gunshot wounds involves the two principles of antisepsis and osmosis. These two principles are, he claims, fulfilled by a combination of ichthyol and glycerin which he has been using for nearly three years. Duggan cites the case of a soldier who had received an abdominal wound which failed to heal under every method of treatment used in various military and civil hospitals. Ten months after the injury Duggan saw him. He had an inflamed scar at exit; evening temperature 101.2 F., no rigors; equal parts of ichthyol and glycerin were applied to scar preparatory to operation next day. During the night the scar gave way, and a large quantity of pus, with a strong fecal odor, escaped; the abscess cavity was syringed out with alcohol and the wound was dressed with equal parts of ichthyol and glycerin; the wound was dressed again at night. A probe could be passed into the abdominal cavity in the direction of the entrance scar for a distance of 5 inches. These dressings were continued for three weeks when the wound healed and the patient was discharged.

### Annales de Médecine, Paris

January-February, 1918, 5, No. 1

32 *Sensibility of Bone to Tuning Fork. L. Bard.—p. 1.
33 *Bacteriology of Tropical Sores. M. Gougerot.—p. 9.
34 *Paralysis of Vasomotor Origin. R. Cruchet, F. Moutier and A. Calmettes.—p. 22.
35 *The Cerebrospinal Fluid in Typhus. D. Daniélopolu.—p. 44.
36 *Vaccine for Cerebral Abscess. Villandre and Rochaix.—p. 53.
37 Mixed Typhoid and Paratyphoid. G. Etienne.—p. 63.
38 Present Status of Epidemic Poliomyelitis. J. Paraf.—p. 73.

32. **Sensibility of Bone to Vibrations of Tuning Fork.**—Bard presents evidence to demonstrate that bone conduction of the vibrations of a tuning fork is more a matter of the sensibility of the bone than has heretofore been appreciated. The acoustic factor predominates at first and arrests attention, when the Weber test is applied to the ear, but as the tuning fork vibrations grow less intense, the tactile perception predominates, and persists after the acoustic has died out. The duration of the perception of the sonorous vibrations thus depends on the sensibility of the skull bones, and aural surgeons should revise their qualitative tests of the hearing, taking this fact into account. It naturally deprives the Schwabach test of all value, and the Gellé test is instructive only when the attention of the subject has been called to the necessity for distinguishing between the acoustic sensation, and the tactile sensation which the Gellé test does not modify. In numerous deafmutes and totally deaf persons, including one with cerebral neurofibromatosis, confirmed by necropsy, which had totally destroyed the auditory and vestibular nerves, Bard has found that the vibrations of the tuning fork placed on the skull are plainly perceived. By studying this on himself and on others with normal hearing he determined certain laws regulating conduction of vibrations in different bones throughout the skeleton, and the modifications induced by disease, especially by tabes.

33. **Importance of Ordinary Bacterial Skin Diseases in Tropical Ulcers.**—Gougerot's extensive experience among the colonial troops now on active service in France has demonstrated that in tropical regions simple bacterial skin lesions are often assumed to be typical tropical ulcers, Delhi sore, craw-craw, etc. On this mistaken diagnosis they fail to get proper treatment, and they drag along for months. Among the typical cases of ordinary streptococcus or staphylococcus lesions described is one of a physician previously practicing in Africa whose alleged craw-craw of seven months' standing subsided at once when treatment as for an ordinary bacterial dermatitis was applied, using pastes instead of salves, gauze instead of impermeable dressings, reducing intake of fluids, avoiding much perspiration and substituting oil or lard for petrolatum. Bacterial dermatitis is common under war conditions and in infants. When duly recognized and simple inexpensive treatment applied, the supposed intractable eczema, syphilitic manifestations or exfoliating dermatitis, often promptly disappears.

34. **Nontraumatic Paralysis of the Arm.**—Three cases are described of nontraumatic paralysis of one arm developing abruptly after several hours' exposure to cold and wet, on sentinel duty, crouching in the snow for four hours. After sleeping in their wet clothes the men woke with sensations "as if the hand was asleep," and cyanosis testified to the progressive vasomotor disturbances. The hand was contracted to form a shallow cup. The tests show that the vasomotors play the predominant rôle in the disturbances. Under hot baths twice a day improvement was realized, and in five or six months nearly normal conditions were restored. If the paralysis should return with cold weather, it will be easy to resume the hot baths.

35. **The Cerebrospinal Fluid in Typhus.**—Daniélopolu here reports study of 142 cases. The fluid was more or less yellow in forty-eight cases during the second week. Cellular reactions also indicate that the typhus toxins have a special action on the tissues of the nervous system and the cerebral blood vessels, evidenced by the mononucleosis, increased albumin, and positive Noguchi test.

36. **Vaccine Therapy of Abscess of the Brain.**—Villandre and Rochaix found operative measures effectual in treatment of 47 of the 61 cases of infectious complications following a war wound of the skull, among 450 skull wound cases. In the 14 other cases, an inaccessible abscess developed in the brain. A cure was realized in all of the 3 cases given autogenous vaccine treatment, although the abscess returned later in one of the cases. Nearly 50 per cent. died of the 11 not given the vaccine therapy. The *Staphylococcus aureus* was

cultivated almost constantly from the projectiles and scraps extracted from the skull wound, even in those that healed apparently aseptically. In treatment of brain lesions, filiform drainage proved most effectual, that is, with horse hairs and a wire loop, but even with this the cavity tends to close up so that puncture has to be systematically repeated. One of the men was thus punctured every four or six days over a period of three months. The wire permits roentgen control also.

### Bulletin de l'Académie de Médecine, Paris

May 14, 1918, **79**, No. 19

39 *Ventilating System in Contagious Ward. J. Renault.—p. 368.
40 *Wire Ligation for, Pseudarthrosis. E. Estor.—p. 370.
41 *Treatment of Malaria. S. Gréhant.—p. 372.
42 The Cerebrospinal Fluid After Concussions. Mestrezat, Bouttier and Logre.—p. 373.

39. **Ventilation of Contagious Ward.**—Renault gives figures showing the reduction in the mortality in the measles and scarlet fever wards since a system of ventilation has been arranged which renews constantly the air at the rate of once and a half per hour. The air is filtered through a thick layer of cotton; it enters the room back of the radiators and escapes through glass blinds, the strips of glass horizontal, installed above the windows.

40. **Treatment of Pseudarthrosis.**—Estor warns that silver wire is liable to stretch and break when buried in the tissues; iron wire is better for the purpose. With pseudarthrosis from any cause, he freshens the end of the stump to make a perpendicular plane surface. A wire, about 80 cm. long, is doubled and wound tight around the stump, nicks keeping it from slipping. Each stump is thus enclosed in a tight wire ring and the ends of the wires are all twisted together thus coaptating the stumps. The bone is strengthened by the wire ring, instead of being weakened, as when the wire bores through the bone, while the twisted ends form a metal frame to hold the stumps in place. In two cases of aseptic suture the wire was tolerated by the tissues, but in his eight other cases he had to remove the wire after consolidation.

41. **Treatment of Malaria.**—Gréhant relates that in his service in Africa, four years in the Soudan and five years in Morocco, he has always succeeded in apparently eradicating malaria by his practice of a daily intramuscular injection of 0.75 or 1 gm. quinin sulphate (according to the patient's size) for three consecutive days when the temperature reaches 39 C. (102.2 F.). If after a time, the temperature goes up again, he gives a new series of three injections, in the same dose. In a camp of German prisoners of war in Morocco, he had every man whose temperature ran up to 39 C. inscribed on a special list. When twenty names were on the list, he started the series of three injections, only fifteen minutes being required to inject the whole group.

### Bulletins de la Société Médicale des Hôpitaux, Paris

April 12, 1918, **42**, No. 12

43 Primary Tricuspid Insufficiency. C. Laubry.—p. 327.
44 *Lethargic Encephalitis. A. Chauffard and Bernard.—p. 330.
45 *Preventive Serotherapy in Measles. Nicolle and Conseil.—p. 336.
46 *Pneumonia from Night in Cellar. Netter and Triboulet.—p. 338.
47 *Rubeola in the Troops. Nobécourt and Richet.—p. 339.
48 Cirsoid Aneurysm and Raynaud's Disease. F. Ramond and A. François.—p. 342.
49 Ptosis of Liver, Spleen and Stomach from Interposed Small Intestine. F. Ramond, Gernez and P. A. Carrié.—p. 344.
50 Generalized Diphtheric Paralysis with Meningeal Reaction. L. Legendre and L. Cornil.—p. 347.
51 Acute Leukemia in Young Man; Fatal in Three Weeks. L. Giroux and M. Verdier.—p. 352.

44. **Lethargic Encephalitis.**—See London and Paris letters, June 22, p. 1963. The discussion on Netter's cases and some observed by Chauffard suggests that the same cause inducing the lethargic encephalitis may be responsible for a certain proportion of cases of hemiplegia, aphasia and mania. It is possible also that poliomyelitis virus may localize at different points, and induce symptoms suggesting encephalitis or polyneuritis or meningitis or cerebellar ataxia or peripheral facial paralysis.

45. **Preventive Injection of Measles Convalescent Serum.**—Nicolle and Conseil injected the serum from the oldest child in a family of four, at the seventh day of convalescence from measles, hoping thus to ward off the infection from a boy of 2, the youngest in the family. He did not develop the disease although constantly with his three brothers who all developed the disease in turn in the course of three days. The injection was made the tenth day after the first symptoms in the first child.

46. **Pneumonia After a Night in the Cellars.**—Netter reports twenty-one cases of pneumonia in children taken down into cellar shelters for the night.

47. **Rubeola in the Troops.**—Nobécourt says that about seventy cases of rubeola have occurred in his division. Any tendency to epidemic occurrence was promptly aborted by twice daily medical inspection and isolation.

### Paris Médical

April 20, 1918, **8**, No. 16

52 *Simulation by the Insane. Laignel-Lavastine and P. Courbon.—p. 305.
53 *Cinchona in Malaria. P. Baufle.—p. 309.
54 *Prevention of Talipes Equinus, etc. Audion.—p. 316.

52. **Simulation of Insanity.**—This article warns that evident simulation of insanity does not exclude a psychopathic basis.

53. **Cinchona in Treatment of Malaria.**—Baufle has found cinchona a valuable adjuvant or substitute for quinin in many cases of malaria. The patients all prefer it to quinin, and his experience in fifty-six cases demonstrates its value, only five of the men having any further attacks after five days of treatment. In a parallel series of twenty-nine cases with quinin treatment, three had attacks afterward. The daily dose of cinchona was four cachets of 0.75 gm. each—a total of 3 gm. of the powder, and 120 c.c. of a 5 per cent. decoction of the powder—a total of 6 gm. He has this entire daily dose taken in his presence in the morning, paying no attention to impending attacks.

54. **Prophylaxis of Talipes Equinus, etc.**—Audion insists that after a sprain of the foot and ankle or war wound of the region, the men must not be allowed to step on the foot as long as this causes pain. When walking is painful, the men distort the foot to ward off the pain; the muscles are stretched and incurable talipes equinus becomes installed. The men must either be kept in bed until they can step on the foot without pain, causing them to raise the heel, or they must be fitted with a plaster boot holding the foot not at a right angle but in slightly talus flexion. The talus position is indispensable in immobilizing the foot, as the ordinary right angle position does not overcome the resistance of the extensors of the foot, the main factor in the equinus deformity.

### Presse Médicale, Paris

May 23, 1918, **26**, No. 29

55 *Phases of Uremia. F. Widal, A. Weill and P. Vallery-Radot.—p. 261.
56 *Data in Pulmonary Tuberculosis. P. Merklen.—p. 262.
57 *Extragenital Syphilitic Lesions. M. Pinard.—p. 263.
58 Physiologic Sugar Solutions. G. Lyon.—p. 264.

55. **Uremia in Chronic Nephritis.**—The symptoms from retention of chlorids with chronic nephritis can be dispelled by restricting the intake of chlorids, but the symptoms from retention of nitrogen are always menacing. Even when there are no symptoms of azotemia, the accumulation of urea in the organism can be demonstrated by the urea content of the blood. The prognosis of the disease and the duration of its evolution can thus be foretold from the urea content of the blood, and this with a precision rarely attained in the clinic. Study of kidney patients over long years has shown that the azotemia passes through a set of phases, from the onset to death, each of which has its special prognosis. When the ureosecretory constant is persistingly high but the urea content of the blood is within normal range, this may be considered the premonitory phase. The second phase is when the urea content of the blood ranges between 0.50 and 1 gm. The urea is evidently accumulating in the organism; another step has been taken along the road of ureosecretory disturbances. This initial azotemia may retrogress, but often it persists a very long time or passes rapidly into the next phase. But as long as it has not passed beyond 1 gm., the organism seems to adapt itself to this azotemia and it is

impossible to foretell the duration of the disease. The clinician should not let his prognosis be influenced by a higher constant, even when it indicates a pronounced deficit in the functional capacity of the kidneys. Cases are cited here which confirm anew that life can be maintained without apparent disturbances even when only a minimal area of the parenchymas are left. But when repeated examination shows that the azotemia is permanently above 1 gm., then the condition is extremely grave, and when 2 gm. is reached and passed, a fatal termination impends, the interval the shorter, the higher the urea content of the blood.

56. **Pulmonary Tuberculosis.**—Merklen classifies in four groups the men suspected of tuberculosis. His classification is based on the existence or lack of parallelism between the local and the general symptoms, and on the analogy between the objective symptoms in the course of stationary and of progressive tuberculous lesions from parenchymatous congestion, with or without bronchiolitis. The first of the four classes comprises the men with parallel general and local findings; the second those with general but slight or no local findings. Those with slight local findings are kept for closer examination. In the others the diagnosis is evident at a glance. The third group comprises the men with slight or no general symptoms but characteristic local findings. This group also requires prolonged study. It includes the numerous cases of tuberculosis developing by *petites poussées évolutives.* This method of evolution by waves is the explanation of the discrepancies so often noted between the man's clinical record and the findings of the moment. His disease progresses by a succession of phases of aggravation and improvement. The aggravation may be in the tissue modifications or in the toxemia, so the general symptoms or the local manifestations may predominate at different times, and the phase of improvement may reach an actual cure by sclerosis. Or these "pushes" may be slight and brief, and a somewhat prolonged study of the case may be required to demonstrate them. His fourth and last group comprises the cases of tuberculosis with an atypical course, recurring bronchitis, persisting congestion of the lung, chronic bronchitis with emphysema, febrile episodes. The diagnosis of the bacillosis may be very probable even at the first examination, but it generally requires confirmation. He describes further the interpretation of the radiologic findings, and discusses the numerous cases of pulmonary tuberculous lesions arrived at such a phase of healing and torpidity that in the conditions of ordinary life they never would be heard from. But with stress of active service the men grow thin and tire easily, complain of diffuse pains, and lack of appetite, and they "get out of breath" after exertion, but there is no cough or expectoration, and the temperature and pulse are normal. Conditions improve materially under repose, and they do not improve without it. Work or fatigue brings them back again.

57. **Undiagnosed Extragenital Syphilitic Lesions.**—Pinard relates four instructive cases of the spread of infection from an undiagnosed extragenital syphilitic lesion. In one case it was on the under part of the chin and was taken for a goiter for months until a skin lesion suggested its true nature. Another case of razor infection under the chin was not differentiated for two months and a half until swollen glands made swallowing difficult. In another case the retrospective diagnosis of syphilis was made after the man's wife developed symptoms of recent syphilis. The infection of both was traced to a syphilitic who was stationed next to the husband at table and bench.

### Progrès Médical, Paris

May 4, 1918, **33**, No. 18

59 Association of Tubercle Bacillus with Acid-Resisting Oospora. A. Sartory.—p. 157.
60 *Primary Operations for War Wounds. A. Demmler.—p. 158.
61 Ethyl Chlorid in War Surgery. H. Vignes.—p. 159.
62 Antityphoid Lipo-Vaccine. C. Pradel.—p. 160.

May 11, 1918, **33**, No. 19

63 Paralysis of Four Cranial Nerves. C. Roubier.—p. 165.
64 *Medical Problems of Aviation. A. Bernard.—p. 166.

60. **Primary Interventions for War Wounds.**—Demmler discusses whether it is not advisable to suture the nerve at once, as soon as the vitality of the tissues permits. Experience seems to be confirming the advantage of this. Tavernier among others has reported three cases in which the nerve was sutured within twenty-four hours of the injury, and the restoration was rapid and remarkable. Demmler urges, further, primary operations on the tendons as a routine measure, thus obviating the retractions and deformities otherwise liable. These primary operations, outside of periods of offensives, might be done at a base hospital not too far back.

64. **Medical Problems of Aviation.**—Bernard remarks that the task of the physician is almost exclusively along the lines of prophylaxis, selection of the candidates and surveillance over them until certain that they are fitted for the service. He insists that this surveillance should be incessant. The physician should live among them, and watch the physical and moral modifications induced by flying, and study each accident minutely to learn how such can be avoided. He says that the training camp should have a commission for study of these problems, including a physiologist, a physician, a surgeon, an ophthalmologist, a neurologist and an ear, nose and throat man.

### Correspondenz-Blatt für Schweizer Aerzte, Basel

May 4, 1918, **48**, No. 18

65 *Opthalmoscopy with Red-Free Light. A. Vogt.—p. 561.
66 Necessity for Intensifying the Campaign against Goiter and Cretinism. B. Galli-Valerio.—p. 569.
67 Realizable Campaign against Venereal Diseases. Dind.—p. 572.
68 *The Coagulovimeter. A. Fonio.—p. 574.

65. **Advantages for Ophthalmoscopy of Light Free from Red Rays.**—Vogt here reports with illustrations further ophthalmoscopic findings discovered with this special red-free illumination. His first communication was mentioned in these columns, March 30, 1918, p. 964.

68. **Index of Coagulating Property of Blood.**—The principle of Fonio's coagulovimeter is to use as the index the power of the given specimen of blood to overcome the coagulation-preventing action of a given quantity of magnesium sulphate.

### Schweizer Archiv für Neurologie und Psychiatrie, Zurich

**1918, 2,** No. 1

69 Reciprocal Independence of Muscle Tonus, Tendon Reflexes and Contractures. N. Betchov.—p. 3.
70 Syphilitic Atrophy of Frontal Lobe. M. Düring.—p. 21.
71 Peculiar War Contracture of Hand. R. Bing.—p. 40.
72 Malformations of Cerebellum. R. Brun.—p. 48. Continuation.
73 Tardy Cicatricial Epilepsy. F. Naville.—p. 106.
74 War Functional Nervous Disturbances. L. Schnyder.—p. 116.
75 War Wounds of the Nerves. Long.—p. 130.

### Annali d'Igiene, Roma

April 30, 1918, **28**, No. 4

76 Biology of Paratyphoid B Bacillus. G. F. Gardenghi.—p. 161.
77 Pseudodysentery Bacilli. B. Maymone.—p. 173. Conclusion.
78 *Glanders in Felines. M. Carpano.—p. 183. Conclusion.

78. **Glanders in Felines.**—A preceding instalment of Carpano's work was summarized in these columns, April 27, 1918, p. 1267. He here reports supplementary research on dogs and cats.

### Gazzetta degli Ospedali e delle Cliniche, Milan

April 21, 1918, **39**, No. 32

79 Infective Jaundice. F. Laureati.—p. 313.
80 Fatal Poisoning from Mercurial Inunctions to Kill Vermin. G. Marangoni.—p. 321.

April 25, 1918, **39**, No. 33

81 *Ulcerative Intestinal Tuberculosis. L. Fioravanti.—p. 327.

81. **Ulcerative Tuberculosis of the Intestine.**—Fioravanti reports a case in which there was spasmodic stenosis from the tuberculous ulcers in the small intestine. Some tuberculous glands were seen in the mesentery corresponding to the region of the stenosis. He made a side-to-side enteroanastomosis in sound tissue above and below the region of the spasm, and the patient was in most satisfactory health, without symptoms from the bowels, when examined two years later. There was no serious pulmonary lesion in this case. In a second case nothing could be found to explain an invagination except a tuberculous lesion in the region, evidently mild but of long standing, with typical ulcerations.

The operation was the same and proved successful in both, but the young woman of the second case succumbed to post-operative pneumonia.

### Policlinico, Rome

April, 1918, **25**, Medical Section No. 4

82 *Pathogenesis of Diabetes Insipidus. C. Moreschi.—p. 97.
83 Wounds of Peripheral Nerves. S. Ricca.—p. 119. Continuation.

April, 1918, **25**, Surgical Section No. 4

84 *Experimental Lesions of the Pituitary Body. A. Chiasserini.—p. 97. Comenced in No. 1, p. 26.
85 *Autografts in Bones of Forearm. L. Losio.—p. 108.
86 Gaseous Infection of War Wounds. V. Calo.—p. 120. To be continued.

82. **Pathogenesis of Diabetes Insipidus.**—Moreschi describes in detail a case of so-called idiopathic diabetes insipidus in a girl of 19, with the urine findings, etc., as modified by intake of water, salt and pituitary extract. He excluded the symptomatic form of diabetes insipidus by giving 10 or 20 gm. of salt. The total amount of urine in the four following days increased materially, although the intake of fluids had been reduced, but the specific gravity did not increase—the reverse of what occurs with symptomatic diabetes insipidus. The girl had attacks of narcolepsy and there was atrophy of the left optic nerve, with left hemianopsia and right optic neuritis, while the pulse was small and slow and the blood pressure low. Analysis of the symptoms and of the effects of various therapeutic measures and comparison with the literature have apparently confirmed the assumption that diabetes insipidus is the result of deficient pituitary functioning with more or less functional modification of the ductless glands, and hence of the work of the vegetative nervous system—an endocrine-sympathetic dystrophy. Other causes for diabetes insipidus may be found in changes in the mid-brain, particularly in the floor of the third ventricle, or in changes in the vegetative system in the chest region from compression of the vagus or sympathetic by a tumor or aneurysm. The morbid conditions entailing the deficient functioning in the pituitary body may be from a tumor or chronic inflammatory lesions as well as from tuberculosis or syphilis or sclerosis of the gland.

In the case reported, 1 c.c. of the pituitary extract used seemed to be the optimum, larger doses not showing any better results. The effect was most pronounced about the ninth hour and entirely disappeared in twenty-four hours. The average specific gravity of the urine changed from 1.0016 to 1.0045; the average molecular concentration from 0.20 to 0.39; the elimination of chlorids was slightly checked, while that of phosphates increased from 1.75 to 2.27 gm.; of nitrogen from an average of 21.1 to 25.1 gm. The findings in this case apparently incriminate the pituitary body alone as responsible for these disturbances.

84. **Experimental Lesions of the Pituitary Body.**—Chiasserini has found it possible to induce lesions of various kinds in the dog pituitary body through an opening in the temporal parietal region of the skull. Hyperplastic lesions in the intermediate part induced polyuria, sometimes intense. In the dogs with lesions of the anterior portion, the skin grew thicker and there was proliferation of bone tissue, suggesting the changes of acromegaly. Inflammatory and degenerative processes, leading to complete destruction of the pituitary body, entailed the most typical form of cachexia and asthenia. Inoculation of the sella turcica with the sporothrix or with tubercle bacilli induced progressive changes in the intermediate or anterior portions of the pituitary body, and these were accompanied by remarkable polyuria or symptoms suggesting acromegaly. In the course of this research the effect of artificial pressure in the sella turcica region was also studied. The report on this will follow later.

85. **Auto-Bone Graft in Gap in Ulna and Radius.**—In Losio's two cases, a segment in both bones of the forearm had been destroyed by a shell. The arm was much shortened and a splint had to be worn constantly. A graft was taken from the tibia and implanted in place. In one case the graft was 11 cm. long and 1 cm. thick, and included periosteum and a thin strip of bone marrow. It was slit in two, and one half was implanted in the bed made for it in the ulna, the other half in the radius. In one case there was pseudarthrosis of the ulna. The results were most excellent in both cases, the men recovering the use of the arm. An illustration shows one of the men holding at arm's length a weight of nearly 7 pounds. The date is still too recent for the ultimate results to be known.

### Riforma Medica, Naples

April 27, 1918, **34**, No. 17

87 *Secondary Venous Hemorrhage. G. Razzaboni.—p. 322.
88 Hair Ball in the Stomach. I. Bruchi.—p. 324.
89 Recent Literature on Hemorrhage during Tonsillectomy. E. Aievoli.—p. 328.
90 *Prophylaxis of Tuberculosis in the Army. E. Maragliano.—p. 332.
91 *Aviators' Sickness. Editorial.—p. 333.

May 4, 1918, **34**, No. 18

92 *Clinical Picture with Protozoan Disease. U. Gabbi.—p. 342.
93 Microbicidal Action of Nascent Chlorin and Oxygen. N. Pane.—p. 344.
94 Malocclusion of the Teeth. B. De Vecchis.—p. 347.
95 Occlusion of Colon Flexure. E. Aievoli.—p. 349.

87. **Secondary Venous Hemorrhage.**—Razzaboni remarks that the progress of the medical sciences during the war has rendered secondary venous hemorrhage extremely rare, yet cases are still occasionally encountered. Bacterial action is generally responsible, the bacterial proteolytic ferments weakening the damaged wall of the vein. The hemorrhage generally occurs suddenly, after some effort or manipulation of the region of the wound. If internal, the symptoms are those of any internal hemorrhage. The provisional hemostasis secured by careful packing, not leaving any spaces in which blood can accumulate, may be all that is necessary, leaving the gauze in place for a few days and then removing it cautiously so as not to disturb the thrombotic occlusion of the vessel. This may become organized in time. If this does not suffice, he has found very useful the application of small forceps, seizing the bleeding point in such a way as to fold in a large part of the circumference of the vessel. The forceps are left in place for several days, until they drop off of themselves. The entire cavity around the forceps is packed tight with gauze. If the external wound is not large enough to permit this, he enlarges it enough for the purpose. Suture of the opening in the vein is far more difficult than to use the forceps. A ligature above and below would also prove effectual, but is not always an easy matter in the depths of the wound. If the other measures fail, this has to be done, opening up the tissues to apply the ligatures on the sound vein walls above and below. With internal venous hemorrhage, suture of the opening is always preferable to ligation, if the vein is of large size.

90. **Prophylaxis of Tuberculosis in the Army.**—Maragliano reproduces a notice recently sent out by the Italian minister of war reiterating the importance of excluding from military service all men with any signs whatever of tuberculosis in any form or period, and discharging from the army all in this category. The minister declares that the large number of soldiers that have to go to the hospitals or be invalided on account of tuberculosis, soon after their enrolment, shows that his directions have been disregarded, and that men have been passed for military service who should have been excluded. He expatiates on the evils resulting from this, the crowding of hospitals and trains, the unnecessary expense, the expense to the state in pensions, etc., but beyond all this the evil to the man himself. His health might have been ample for civilian life, but the exigencies of warfare have upset the balance and thrown him a burden on society. The minister impresses on the boards of review, the medical inspectors and the hospitals to watch out for men suspected of tuberculosis or who are supposed to have recovered from tuberculous lesions and have them sent for examination to the board of revision.

Maragliano comments with approval on the minister's words, and says that they materially simplify the task of the medical examiners. The latter do not have to study each individual case to determine whether the good general condition turns the scale in favor of fitness for active service. No. If they demonstrate a tuberculous infection in the candidate, this excludes him. He may be in apparently perfect health, but the government does not wish to upset the balance which renders him useful to himself and to society. Experience has

demonstrated that otherwise he becomes useless to himself, to the army and to society, and becomes a source of danger to the service and to society. Maragliano emphasizes further that the various official circulars on the question have made it plain that the government does not wish to admit to or to retain in the army men affected with tubercle bacillus infection, even in its rudimentary forms, even when it has not yet determined any anatomic alterations. This is precisely the case in the clinical picture called "pretuberculosis"; certain findings prove the existence of tuberculous infection, but with our present means of clinical and radiologic observation we are unable to detect any anatomic changes. This clinical picture is equivalent to "latent" tuberculosis. The official announcements, he continues, are based on the teachings of pathology and the modern clinic in the matter of tuberculosis. Time and experience have demonstrated that tubercle bacillus infection, even if it has not yet created changes in organs, usually explodes under the fatigues and vicissitudes of military life, and the war department, in concordance with the two houses of parliament, has decided that it does not wish to have this happen. Hence it does not wish to have enter the army or stay in the army those in whom this may happen or it has already happened. Consequently the official announcement is positive, absolute; nothing is left to the judgment of the military medical officer or examiner, as with other morbid contingencies. If the man has tubercle bacillus infection of any kind, he is not wanted in the service. But provision is made for expert examination and revision to eliminate all doubts.

91. **Prevention of Aviator's Sickness.**—Prof. A. Aggazzotti proposes the term "hypobaropathy" to designate the disturbances experienced by aviators at high altitudes. The disturbances are the result of the rarefied air, and are the same as those experienced by mountain climbers, owing to the low barometric pressure. Acute pain in the normal ear is not a direct symptom from this cause, but is indirectly due to it, as he has explained. The conditions producing it are corrected by making swallowing movements, working the jaws, and yawning. There may be minute bleeding from the superficial vessels in lips and nasal mucosa, but the cold prevents extensive hemorrhage, and such has never been observed.

He accepts Mosso's explanation of the disturbances in rarefied air as due to changes in the gases of the blood, especially impoverishment of oxygen and of carbon dioxid. The proof of this assumption is provided by the absence of these disturbances, even in extremely rarefied air, if the blood is kept supplied with oxygen and carbon dioxid. In his own recent experiments at the Institute of Physiology at Turin, he was able to bear perfectly a barometric pressure of 140 mm.—which corresponds to an altitude of 13,491 meters—when he breathed a gas mixture consisting of 67 per cent. oxygen and 12.7 per cent. carbon dioxid. He used in this way 11 liters of the mixture, breathing naturally, without the slightest disturbance of any kind. With a mixture consisting of 67.8 per cent. oxygen and 13.4 per cent. carbon dioxid he found that all was well with him even at a barometric pressure of only 122 mm., corresponding to 14,589 meters. A higher altitude than this has never been reached in aeroplanes or in the pneumatic cabinet. His mind was clear, vision normal, his movements certain, with no tremor of the lips or sensation of heat in the face.

Another fact which aviators should bear in mind is that when they begin to feel disturbances from the rarefaction of the air, if they will make muscular movements, this improves the oxygenation of the blood, as respiration becomes more active, and carbon dioxid is produced in the muscles and passes into the blood. The question now is to provide the simplest and most convenient means for utilizing this concentrated gas mixture at high altitudes. The official board of aeronautics has research now under way at the uffici psicofisiologici di aviazione at Turin and Naples, seeking to solve the problem of a suitable mask and recipient.

92. **Clinical Differences Between Protozoan and Bacterial Diseases.**—Gabbi mentions as the chief differences the absence of complications with the protozoan diseases, especially on the part of the heart, joints, lungs—except in the later stages—and of serous membranes, with the exception of trypanosomiasis and one variety of relapsing fever. Polyserositis has never been reported with a protozoan disease. Rashes are more common than with bacterial diseases, and kidney involvement is relatively common. Other features are the gravity of the course and the fact that each seems to have a specific remedy. The protozoan diseases occur in epidemic form, in spring, summer or fall, and are unknown in cool regions. He urges the general practitioner to trust to his impressions in dubious cases, instead of waiting for laboratory confirmation of a protozoan disease.

### Brazil Medico, Rio de Janeiro

March 23, 1918, **32**, No. 12

96 Eugregarina Parasites of Arthropods. IV. C. F. Pinto.—p. 89.
97 *Epinephrin Content of Suprarenals from Medicolegal Standpoint. O. Sampaio.—p. 90. Conclusion.
98 Painful Talipes. F. Luz.—p. 93.

97. **Epinephrin Content of Suprarenals from Medicolegal Standpoint.**—The first instalment of Sampaio's article was summarized in these columns, June 29, p. 2058. He here gives the findings in twenty-two cadavers. The epinephrin content of the extract of the suprarenals ranged from 0.50 to 0.16 per thousand in cases of sudden death, while the range in cases with agonal dying was only from 0.12 to 0.01 per thousand. It seems, therefore, that a strong concentration, for example, 0.33 per thousand, excludes the assumption of a lingering death, while below 0.05 per thousand excludes sudden death in the absence of disease of the suprarenals.

### Gaceta Medica de Caracas

April 15, 1918, **25**, No. 7

99 *Twenty-Fifth Anniversary of the Gaceta. L. Razetti.—p. 68.

April 30, 1918, **25**, No. 8

100 *History of Medicine in Venezuela. F. A. Risquez.—p. 79.

99. **The Gaceta.**—Razetti reviews the twenty-five years of his periodical and celebrates its "silver wedding with Father Time" by publishing serially the entire list of contents for the twenty-five years. He is perhaps the only medical editor who can assert that he has never rejected an article sent in for publication by a physician of his country. To his efforts was due the organizing of the first medical society in Venezuela.

100. **History of Medicine in Venezuela.**—Risquez relates that the founding of the *Gaceta* coincided with the First Pan-American Medical Congress, to which he was the official delegate from Venezuela, and from that year dates the organization of the profession. Before that, the country was hopelessly behind the progress realized elsewhere. Lister inaugurated the antiseptic method in 1869, but an interval of twelve years elapsed before it was applied in Venezuela. But after the founding of the *Gaceta* and of the local medical society, the country soon caught up with the progress of the medical world in general. Diphtheria antitoxin was brought into use within five months of its introduction into science, and even this delay was only from the inability of the Paris Pasteur Institute to produce enough for exportation at first. Risquez published in 1894 in the *Gaceta* a study of a certain disease which seemed to be neither malaria or typhoid and yet had features suggesting both. Two years later Achard published an identical description and coined for the disease the name paratyphoid. Bacteriology since has confirmed the correctness of the descriptions, but the incident confirms anew, Risquez remarks, "that for an idea to get diffusion throughout the world, it has to start in the brain of some Frenchman."

### Medicina Ibera, Madrid

Jan. 24, 1918, **2**, No. 12

101 *Digitalis and the Blood Pressure. D. T. Hernando.—p. 93.
102 Reforms Needed in Medical Education. S. Sierra y Val.—p. 99.
103 Puberty. Blanc y Fortacin.—p. 119. Conclusion.

101. **Action of Digitalis on Blood Pressure.**—Hernando's research on animals has shown that in normal animals digitalis has little if any influence on the blood pressure, but it has a marked influence in raising the pressure in the isolated heart, especially when it was working badly before.

Experiences in human beings practically confirmed these findings; as a rule the increase is insignificant and there may be even a drop in the pressure. The experiments that have been published showing a vasoconstrictor action were with doses too large to be used therapeutically. With smaller doses, digitalis has a vasodilating action. The mesenteric vessels are more sensitive than the peripheral, and digitalis seems to have a constricting action on them with a dilating action on the peripheral vessels. Epinephrin, strychnin and caffein have a similar action. This is particularly beneficial when the splanchnic vessels are gorged and the peripheral empty. The data presented confirm that the action of digitalis is almost exclusively confined to the myocardium. It increases the heart's contracting power, tonicity and excitability, but reduces the conductibility. The main field for digitalis therefore is in perpetual arrhythmia, the ventricle contracting irregularly and the auricle not realizing actual contractions. This type forms about 60 per cent. of the asystoly cases. With extrasystoles, and with sinus arrhythmia, the effect of digitalis is much less certain and it may even do harm. It is contraindicated with partial heart block, but with total block it may prove useful as it acts separately on the auricle and ventricle. In asystoly with abnormally high blood pressure, digitalis improves conditions in the heart, and thus reduces the blood pressure. Some of the action of digitalis may be explained by assuming that it increases the coagulating power of the blood, as Van der Velden seems to have established. In acute infectious diseases, when digitalis fails to relieve, some paralysis of the vessels or intense bacterial toxic action on the heart must be assumed. The pneumococcus toxin does not seem to act intensely on the heart, and the heart disturbances in pneumonia are more of mechanical than of chemical origin, which explains the efficacy of digitalis in pneumonia in comparison to other diseases.

### Prensa Medica Argentina, Buenos Aires

March 30, 1918, **4**, No. 30

104 *Measurement of the Pelvis. J. B. Gonzalez.—p. 427.
105 *Traumatic Spondylosis. H. L. Plaza.—p. 431.
106 Bernhardt's Paresthetic Meralgia. J. A. Lopez.—p. 437.
107 The Campaign against Tuberculosis. G. A. Alfaro.—p. 438.
108 Normal Beef Serum in Treatment of Anthrax. J. Penna, J. B. Cuenca and R. Kraus.—p. 439. Continuation.

104. **Obstetric Pelvigraph.**—Gonzalez gives an illustrated description of his quadrant instrument, which has a weight to hold it vertical. He compares the various features of this pelvigraph with others in use, claiming that it can be applied without causing pain and is extremely simple, while the figures are exact and provide a complete outline of the sagittal plane of the pelvic cavity with correct figures for the sacral measurements, for the conjugata vera and for the slant of the pubis.

105. **Traumatic Spondylosis.**—The necropsy showed that the pains in the stomach and other nervous troubles were, as supposed, the consequence of compression of the seventh and eighth spinal roots from a trauma affecting the spine seven years before. The man committed suicide just before the contemplated operation to sever the roots involved. Necropsy confirmed its feasibility.

### Revista de la Asociacion Medica Argentina, Buenos Aires

March, 1918, **28**, No. 160

109 Ileus from Gallstones or Diverticulum. B. N. Calcagno.—p. 151.
110 *Pathogenesis of Pelvic Infections. C. A. Castaño.—p. 159.
111 History of Gynecology in Argentina. C. A. Castaño.—p. 202.
112 History of Public and Social Hygiene in Argentina. E. R. Coni.—p. 219. Continuation.
113 *Disturbances of Pituitary Origin in Gynecology. J. Guardado.—p. 256.
114 Fibrosarcoma of Rectum. T. Kenny and G. Segura.—p. 261.
115 A Surgeon's Impressions of North America. R. E. Pasman.—p. 274.
116 *Buba, Espundia or Uta. J. F. Recalde.—p. 288.

110. **Pathogenesis of Pelvic Infections.**—Castaño refers particularly to phlegmons in the broad ligament, analyzing the literature on the subject of pelvic infections in general and the microbes responsible for them and their portals of entry. Besides surgical and accidental traumatisms, horseback riding, chilling during menstruation and venereal excesses have been incriminated as accessory factors. Sound organs are not absolutely but only potentially sterile, and when the vitality of the organ is reduced from any cause, the scanty bacteria in the organ are able to attack the tissues. Castaño has been able to induce in animals by this mechanism typical phlegmons in the broad ligaments. He induced in the animals a latent microbism by injecting extremely attenuated cultures of staphylococci and then, aseptically traumatizing the uterus, the latent infection in the blood was attracted to that point. An inflammatory process developed in the uterus and this in time entailed a phlegmon in the broad ligament. He argues that this same mechanism may be responsible for certain cases of genital infections after abortions and deliveries, the latent infection previously present in the organism being attracted to the uterus by the wound-like conditions left by the termination of the pregnancy. In conclusion he lists twenty-five determining causes and eighteen predisposing causes for phlegmon of the broad ligament, emphasizing that mechanical, anatomic and constitutional factors may intervene in addition to the infectious factor. In eight cases personally observed, the gonococcus was found in the pus in one case, the pneumococcus, streptococcus, or staphylococcus and colon bacillus in some others, but in three cases it proved impossible to cultivate any microbes from the pus obtained by puncture of the posterior fornix of the vagina.

113. **Pituitary Treatment in Gynecology.**—Guardado remarks that it used to be said that Nature protected tuberculous women against losses of needed blood by suppressing menstruation. But we know now that this amenorrhea is probably the result of a toxic action on the thyroid. This seems to be responsible also for the night sweats and the discrepancy between pulse and temperature. Likewise the influence of the pituitary body on ovarian function has been experimentally demonstrated. On the basis of these and other premises, Guardado urges a trial of pituitary treatment in gynecologic processes rebellious to other measures. He has found a combination of pituitary and ovarian treatment effectual in many cases of congestion in the pelvis. This organ therapy has failed in others, and in one case the scanty menses grew still scantier. In one woman with unusually developed hair system, the menses had gradually subsided to complete amenorrhea for six months. Under pituitary treatment menstruation returned to normal and has persisted normal during the year since. In another woman of 28 the amenorrhea was of over two years' standing and there were other symptoms of ovarian insufficiency. Ovarian treatment gave no relief, but under pituitary treatment menstruation returned to normal after a brief exaggerated period at first.

116. **Brazilian Buba.**—Recalde discusses prophylaxis and treatment of this form of leishmaniasis encountered in South America. It is known also as espundia or uta. He advocates excision of the sore, and has been applying this since 1913 with excellent results, especially when supplemented with tartar emetic by the vein. Prophylaxis includes refraining from picking the nose with the finger, and protecting all skin lesions with tincture of iodin. This causal leishman body does not get into the blood, and contagion occurs by direct contact of skin or mucosa. The leishman body once installed in the skin of man loses its flagella and becomes incapable of infecting other persons, although by direct contact it can start other lesions on the same person. Recalde ascribes to the loss of the flagella its inability to penetrate into the blood stream.

### Revista de Medicina y Cirugia Practicas, Madrid

April 7, 1918, **119**, No. 1501

117 *Suppurating Echinococcus Cyst in Lung. J. C. Castellvi.—p. 5.

April 14, 1918, **119**, No. 1502

118 Enuresis Nocturna and Adenoids. A. M. Calderin.—p. 33.

117. **Echinococcus Cyst in Lung.**—The retrospective diagnosis was that an echinococcus cyst had "died" and had suppurated. The first symptoms were diagnosed "influenza with old sclerosis of the right apex." Nearly a year later the man of 46 returned complaining of occasional pain in

the right thorax and that for some time he had been expectorating white foamy sputum, occasionally blood streaked. The fourth, fifth and sixth interspaces were tender. There was a slight tendency to dyspnea, especially in certain attitudes, and there was slight tachycardia. These symptoms suggested irritation of the sympathetic system from some inflammatory process of undetermined nature, but the sputum and blood were free from tubercle bacilli and parasites, and puncture was negative, as also deviation of complement tests. Roentgen examination showed that the suppurating process could not be in the pleura. The symptoms grew rapidly more serious, and the man died suddenly the third month, the day before the contemplated operation.

### Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 23, 1918, **1**, No. 12

119 *Latent Nystagmus. J. van der Hoeve.—p. 790.
120 *Treatment of Tetanus Neonatorum. S. B. De V. Robles.—p. 800.
121 Physical Condition of Antwerp Schoolchildren. M. C. Schuyten.—p. 808.
122 Psychogenesis as Aid in Differential Diagnosis of Melancholia and Psychasthenia. J. H. van der Hoop.—p. 813.
123 *Tetanus or Hysteria? N. A. A. van de Roemer.—p. 819.

119. **Latent Nystagmus.**—Van der Hoeve describes eight cases with apparently normal conditions except when one eye was covered. Then nystagmus was evident at once in the other eye. This latent nystagmus might have serious consequences when extraneous conditions compelled the use of one eye only. He theorizes to explain this latent nystagmus, ascribing it to the unstable balance of the center for the associated movements of the eyes. Conditions gradually right themselves, and the nystagmus disappears in time.

120. **Tetanus Neonatorum.**—Only one of the three infants died in Robles' three cases; the others recovered although the symptoms had been very severe. The main reliance in treatment of tetanus in the newly born is on narcotics, chloral, ether, chloroform and morphin. He gave them freely, as the tolerance in tetanus is exceptionally high, and they seem to have a direct action on the tetanus toxin besides their sedative influence. He found the use of an incubator in a dark room a great advantage as it protected the infant against light and noise—every irritation of the kind bringing on new paroxysms. The infants were 9, 13 or 15 days old, and he injected 120 units of antitetanus serum several times. The incubation seemed to have been eight, ten and eleven days. Baginsky and Heubner are said to have never had an infant with tetanus neonatorum recover, Escherich had one recovery in fourteen cases and Shukowski had 2 per cent. recover.

123. **Tetanus or Hysteria?**—Roemer reports a case which warns that the possibility of hysteria should not be forgotten even when paroxysms suggesting tetanus develop in a person presenting an infected wound.

### Mededeelingen van den Burg. Geneesk. Dienst, Batavia

1917, No. 4

124 *The Mosquitoes of the Dutch East Indies in connection with Malaria. W. Schuffner and others.—p. 1, p. 25 and p. 42.
125 *Prospects of Prophylaxis of Malaria. W. Schuffner.—p. 48.

124-125. **Mosquitoes of East Indies and Prophylaxis of Malaria.**—This profusely illustrated report of research on the various mosquitoes of the Dutch East Indies is printed in parallel columns in Dutch and German. Schuffner says that cutting down trees and bushes to destroy the lurking places for mosquitoes has proved of little use. In the Andamans the result was disastrous, as the treeless areas, although successful in getting rid of one type of mosquitoes, attracted another type, the ludlowi, which is much more dangerous from the malaria standpoint. It seems to be absolutely impossible to eradicate all breeding places for the mosquito except when natural conditions favor drainage. This is not the case in the fisher villages along the coast, which need it most. Only the well-to-do can have properly screened houses. Quinin prophylaxis is also impossible to realize in a scattered population where it has to be kept up indefinitely, without the discipline of a military or industrial environment. Adults soon weary of it, and it is possible only in the rarest cases to give the children effectual quinin courses. Tropical hygiene is practically powerless against malaria as a folk disease. It is far easier to clear a place of beriberi, ankylostomiasis or cholera than it is to eradicate malaria in the general population. On all sides, he says, are heard the confessions of failure. Even Manteufel after twelve years' work at Dar-es-salam wrote in 1914 that "quinin prophylaxis of malaria is growing every year more and more unpopular among the blacks." With a population of 23,000 nearly $5,000 had been spent annually for the purpose. Schuffner adds that the problem would be solved if we could discover some means or remedy which would destroy the gametes as promptly and certainly as quinin destroys the schizonts. Then the people could be compelled by law to submit to a thorough course of treatment.

### Hospitalstidende, Copenhagen

April 24, 1918, **61**, No. 17

126 *Light Treatment of Bone Tuberculosis. A. Berntsen.—p. 513.
127 Hallucinations. Wimmer.—p. 525. Commenced in No. 16, p. 496.

126. **Arc Light Treatment of Bone and Joint Tuberculosis.**—Berntsen has been investigating on twenty-seven patients the modifications in the blood during a course of carbon arc light treatment of so-called surgical tuberculosis. No noticeable changes were apparent in the blood picture, merely the fluctuations within the natural range.

### Ugeskrift for Læger, Copenhagen

May 9, 1918, **80**, No. 19

128 *Occult Hemorrhage. J. P. Gregersen.—p. 733. Commenced in No. 18, p. 691.
129 Purulent Sputum Does Not Appreciably Modify Test for Occult Blood in Stools. J. P. Gregersen.—p. 740.

128. **Occult Hemorrhage.**—Grégersen has simplified the test for occult bleeding in the stools. All that is necessary for it is a scrap of stool, so small that it can be carried between two slides, and the reagent, made up in powder form. It merely requires dissolving when ready to use, and is dropped directly on the fecal substance. The work issues from the medical service of the public hospital at Copenhagen, and states, to begin with, that the feces of normal persons, even on a meat-free diet, contain a certain proportion of blood (according to his data, from about 0.03 to 0.005 per cent.). Hence the phenolphthalein and thymolphthalein tests are not suitable as they give positive findings with extremely minute admixtures of blood. The sensitiveness of the benzidin test can be controlled by the strength of the solution. He uses a powder consisting of 2.5 cg. benzidin and 20 cg. barium peroxid. These powders keep well in waxed papers. When ready to use, one of the powders is poured into a measuring glass, and on top of this is poured 5 c.c. of a 50 per cent. solution of acetic acid. We thus obtain a 0.5 per cent. solution of benzidin in which the necessary proportion of hydrogen peroxid is generated as the barium peroxid is dissolved by the acetic acid solution. The latter solution also keeps well. The scrap of feces, about the size of a hemp seed, taken from the center of the lump, is spread in a thin layer on a slide, and from 2 to 4 drops of this reagent are dropped on it. If the specimen turns a greenish blue, a pale blue, in the course of from fifteen to sixty seconds, the specimen contains blood in a proportion of about 0.2 to 1 per cent. If the tint is a livelier blue and the change in tint occurs in from three to fifteen seconds, the blood content of the specimen is about 1 to 5 per cent. With a still more rapid change of tint and a darker blue, the blood content is over 5 per cent. Two or 3 drops of the reagent are required for 1 drop of urine. He has found persistent occult bleeding one of the very earliest symptoms of cancer. With gastric ulcer, the bleeding comes and goes, but never keeps up long. Negative findings for a few days disprove the assumption of cancer. Gregersen has found it convenient to prepare some filter paper by dipping it in a very dilute solution of acetic acid with minute blood admixture. The dried paper does not show the presence of blood, but if a drop of the benzidin reagent is dropped on it, the characteristic greenish blue tint appears at once. This is a convenient test to show that the reagent is properly made.